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ABSTRACT

The challenge to independent schools is maintaining excellent facilities and instruction while providing access to students from the widest range of financial backgrounds possible. This is difficult when many independent schools struggle to balance their budgets. There is growing evidence that independent schools are becoming less affordable and that compensatory trends in financial aid may be unsustainable. Increasingly affluent and inaccessible independent schools will not be in the position to play an important role in educational reform if trends continue. The National Association of Independent Schools began the Project on Pricing and Affordability to address these problems. As an outgrowth of that project, this book is designed to stimulate and support imaginative thinking in the independent school community on educational quality, access, and affordability. There are eight chapters: (1) "Background: The Project on Pricing and Affordability"; (2) How to Use This Book"; (3) "Where Do the Dollars Go?"; (4) "Financial Equilibrium: Balancing the Present and the Future"; (5) "Financial Assistance: How Is It Working and Where Are We Headed?"; (6) "Class Size and Individual Attention: Reexamining Articles of Faith"; (7) "Variety and Scale in School Programs: The Interplay Between School Mission and Market Forces"; (8) and "Agenda for Future Research." An index is included. (Contains 40 references.) (JPT)

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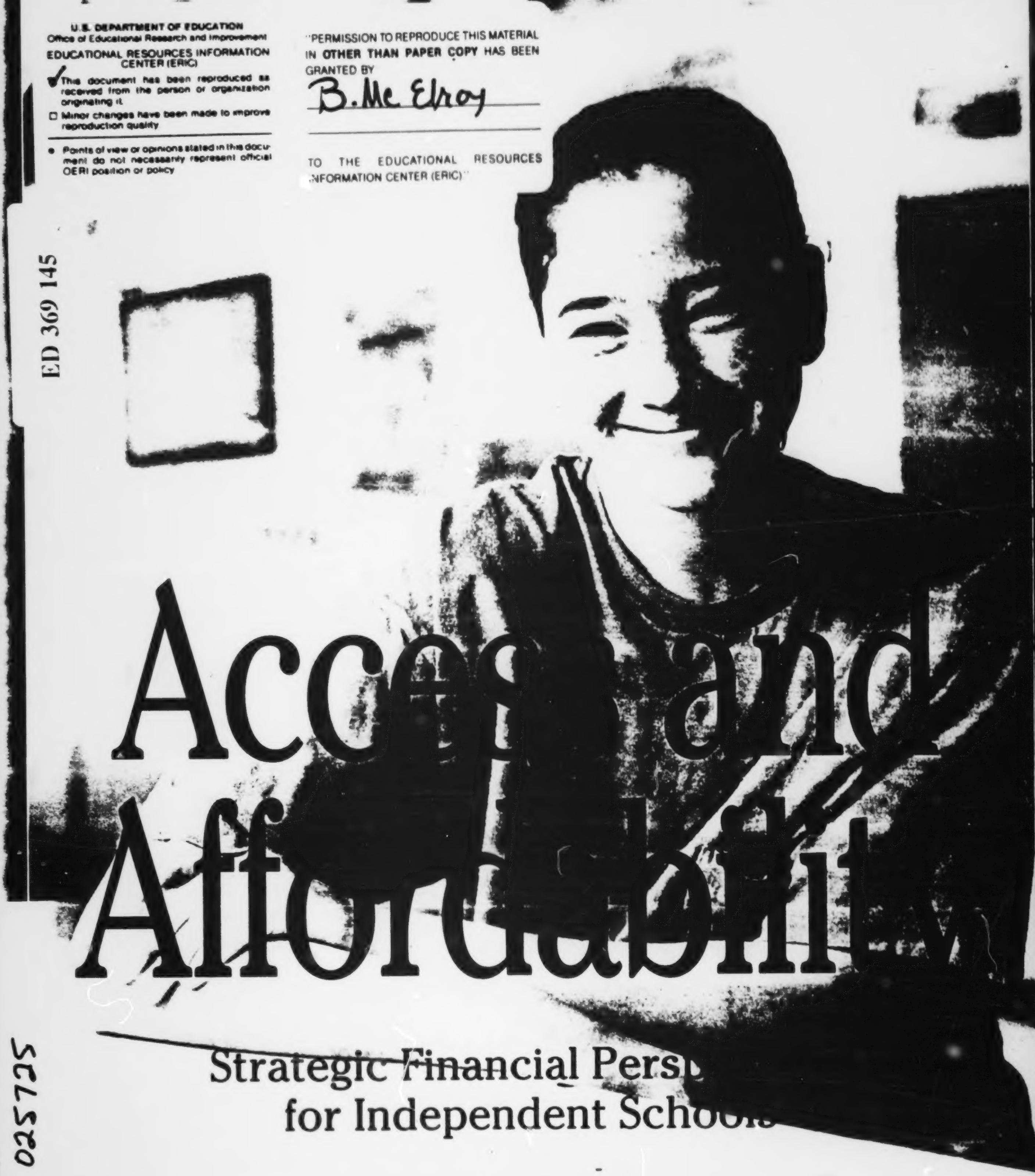

Access and Affordability

Strategic Financial Perspectives for Independent Schools

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Access and Affordability

Strategic Financial Perspectives for Independent Schools

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Table of Contents

v Contributing Authors
vii Acknowledgements
ix Foreword

INTRODUCTION: CONTEXT AND CHALLENGE

1 Taking Stock and Looking Ahead
Peter Relic
3 World-Class Schools
Lester Thurow

I BACKGROUND: THE PROJECT ON PRICING AND AFFORDABILITY
Peter Aitken

9 Introduction
10 Goals of the Project on Pricing and Affordability
12 Key Statistics
17 Rationales Behind Financial Assistance Programs
19 Independent School Affordability Index

II HOW TO USE THIS BOOK
Peter Aitken, Nancy Kelley, Susan Stone

23 What's in the Book
25 General Thoughts About Process
27 Specific Suggestions for Approaching This Material

III WHERE DO THE DOLLARS GO?

29 Introduction
Peter Aitken
30 Independent School Budgets
Peter Aitken
32 Downsizing
Peter Aitken
33 The Outlier Study
Peter Aitken
40 The Impact of Tax Policy on Financial Assistance Programs
Thomas Vitullo-Martin, Peter Aitken
48 Analyzing Private School Expenditures: A Resource Allocation Model Applied to Independent Schools
Bruce Cooper
59 Conclusion
Peter Aitken

IV Financial Equilibrium: Balancing the Present and the Future

Peter Aitken, Neil Cullen, Daphne Kempner, Ellen Raphael

61 Introduction
62 Current Revenues and Expenses
63 Balancing Revenues and Expenses Over Time
69 Preserving or Increasing the Endowment
70 Preserving the Physical Plant
72 Conclusion

V Financial Assistance: How Is It Working and Where Are We Headed?

Peter Aitken, Nancy Kelley

75 Introduction
76 Measures of Access and Affordability
78 Analytic Methods
90 Conclusion

VI Class Size and Individual Attention: Reexamining Articles of Faith

Peter Aitken, Vivian Anthony, William Keator, Ann Tottenham

93 Introduction
95 Class Size: An Overview
96 Research on Class Size and Academic Achievement
100 Individual Attention
102 Quantitative Models
111 Conclusion

VII Variety and Scale in School Programs:
The Interplay Between School Mission and Market Forces

Peter Aitken, Nancy Kelley, Arthur Powell, Susan Stone

113 Introduction
114 True Mission
116 Evaluating Your School's Mission: Thoughts About Process
117 Methods and Models
132 Conclusion

VIII Agenda for Future Research

Peter Aitken, Thomas Vitullo-Martin

133 Introduction
133 Financial Characteristics of Independent School Families
134 Taxation and Legislation
135 Competition and Technology
137 Conclusion

139 Project on Pricing and Affordability: Research Group Members
147 Bibliography and References
149 Index

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Foreword

MOST OF US IN THE INDEPENDENT SCHOOL COMMUNITY WANT OUR schools to be excellent and at the same time want them to be accessible to families from the widest possible range of economic backgrounds. Is it reasonable for us to want both high quality and wide access at the same time? If you're an idealist, your answer to this question is "yes." In practice, it's difficult to see how it can be done. Many of us work enormously hard just trying to balance school budgets from year to year, worrying about faculty salaries, or suspecting that we may be deferring maintenance and borrowing from the future to pay for the present even as it is. Under these circumstances, to take on the fundamental rethinking required to make our schools less costly and more accessible might seem like the quest of a modern-day Don Quixote.

But the case for fundamental rethinking is a strong one, and the time is ripe. In this book Lester Thurow throws down a challenge by suggesting that there's not a single world-class high school—public or independent—in the United States. To be sure, his criteria are test scores and economic competition. Some of us would take issue with him, arguing that test scores are not a sufficient gauge of school quality and that American schools have a wider range of educational and developmental goals than do those in many other countries. But the nation's economic health determines much of its capacity for problem solving, both domestically and globally, and economic health in turn depends on an educated population. In a thoughtful introduction, NAIS President Peter Relic reflects on Thurow's assessment, discerns its implications for independent schools, and reminds us that public and private schools are ultimately on the same team.

There is disturbing evidence that independent schools are growing less affordable, less accessible, rather than more so, and that recent compensatory trends in financial aid may not be sustainable. An increasingly affluent and exclusive independent school sector will not be well positioned to play as significant a role as it might in the team effort. Meanwhile, the climate for educational reform is favorable, and a variety of new endeavors—New American Schools, Edison Project schools, voucher and choice programs—reflects the restless creativity and initiative of American politicians, corporations, educators, and parents eager to improve the performance of both public and private schools.

We must face the possibility that independent schools are neither excellent by some world standards, nor accessible, nor moving toward greater inclusiveness. You don't have to be Don Quixote to decide that such a set of problems is worth struggling with.

The Project on Pricing and Affordability grew out of my concern for the political and socioeconomic implications of the tension between independent school goals for high quality and wide access. At an early stage, the NAIS Trustee Committee encouraged me to develop these ideas and to suggest how NAIS could offer resources that would be helpful to schools. Former NAIS President John Esty was interested and supportive. Peter Relic formally endorsed the project and funded its research phase on his arrival at NAIS in the summer of 1991. Professional colleagues at NAIS, in schools, and elsewhere contributed significantly to our thinking along the way. Most remarkable has been the pro bono work, since February 1992, of members of the project's Research Group, who are listed at the end of this book. NAIS is deeply indebted and lastingly grateful to them.

Idealism is alive and well in independent schools. But the increasing complexity of the day-to-day demands on schools and their leaders is a major challenge. Long-term visions and the strategies to translate them into institutional change require investments of time, creativity, and imagination. An adequate level of such investment is our best way of ensuring that tomorrow's independent schools will be as good as they can be. An inadequate level is the qualitative equivalent of deferred plant maintenance. It insidiously erodes institutional vitality.

This book is meant to complement, stimulate, and support imaginative thinking by everyone in the independent school community who is concerned about the issues of quality, access, and affordability. The transformation of ideals into realities is hard work that calls for patience and perseverance. But it is also uniquely important and rewarding work. Let's do it.

Peter Aitken
Cambridge, Massachusetts
January 1994

Introduction

Context and Challenge

TAKING STOCK AND LOOKING AHEAD

Peter Relic

THROUGHOUT THE 1980S, GOOD AND IMPORTANT DECISIONS WERE MADE that continue to affect independent schools in profound and sometimes perplexing ways. Determined to do what was right, boards and heads improved teachers' salaries and benefits, and at the same time ambitiously increased financial aid with the aim of enhancing access to our schools. There were other pressures for spending, too. Deferred maintenance was addressed in the '80s, and many schools constructed a glorious new generation of buildings. Spending hikes for staff and curriculum development and innovative educational programs and technologies were essential. Meanwhile, the number of teaching and other academic positions also grew, often well out of proportion to enrollment growth.

To help finance all of this, independent school fund-raising became more sophisticated, with new approaches to annual and deferred giving, capital campaigns, and corporation and foundation philanthropy. And, of course, tuitions escalated.

As the primary source of revenues, tuitions—which constituted 60 to 80 percent of the operating budget in many schools—grew far more rapidly than the consumer price index. The existence of a strong parent market for our schools, somehow impervious to the vicissitudes of the American economy, seemed to be an article of faith.

But important economic and demographic shifts in America—a recession and the short-term shrinkage of the school-age population—jolted the independent school world. Some independent schools did move gracefully into the '90s, but many others slammed into the wall. Parents lost income and sometimes jobs; many who had been generous donors and full-tuition payers could no longer absorb tuition increases and were stunned to find themselves applying for financial aid.

Given all these new budget pressures and changes in the economic and demographic picture, school heads, business officers, and trustees began to focus increasingly on cost containment. They turned to NAIS to see if the association could be as effective at providing helpful data on containing costs as we were at suggesting worthy new spending projects. Although the Project on Pricing and Affordability was therefore of considerable interest to such planners and decision-makers in schools, it had not been conceived as a response to recession and to recent demographic shrinkage in the school-age population. Peter Aitken, then NAIS director of research and information services, had designed, proposed, and undertaken the three-year, research-based study with the aim of examining the tension between the goals of high educational quality in and wide access to independent schools.

Aitken gathered a remarkable research group to consider the complex interrelationship of tuition, financial aid, and families' ability to pay for an independent school education. This book is the outcome of the work of the Research Group between February 1992 and June 1993. We hope it will stimulate a dialogue in the independent school community about how we can continue to work toward the twin objectives of excellence and inclusiveness in our schools.

Why are these questions of quality and access so important? We in independent education need to examine our pricing structure not only to assess an individual school's financial health and viability, but also to gauge our capacity to make a broader contribution to education and society.

The roles of our graduates as citizens and consumers, as business people and professionals, as artists, diplomats, and educators once could be defined in predictable, traditional ways. No longer. Our world is changing dramatically, wonderfully, frighteningly. We must prepare our graduates to cope with and contribute to a new, smaller, global society continuously changing as a result of governmental upheavals, scientific miracles, and social revolutions.

We have an obligation, too, to seek financial stability because of the unique way in which independent schools can serve American education as a whole. Our independence gives us a flexibility in governance that most bureaucracies do not have. We enjoy the ability to change, to experiment, to innovate; we therefore have an obligation to interact, to share, and to collaborate with educators from other sectors.

In the most practical possible terms, to ensure their very survival, independent schools must have their fiscal houses in order. We face a changing, more diverse, more competitive educational marketplace with consumer-oriented parents, the privatization of some public schools, and the introduction of new for-profit school ventures.

In the final analysis, however, our search for resources and creative solutions to the pricing quandary should be undertaken for the right reasons—because we realize that our schools become stronger as we more accurately reflect a changing America, and because we want to help improve education for all children everywhere.

As we begin our examination of pricing and affordability, let us pause to reflect on a challenge issued by Research Group member Lester Thurow, former dean of the Sloan School of Management at the Massachusetts Institute of Technology. In the essay that follows, Thurow asserts that there is not a world-class high school in the United States today. Not public, not parochial, not independent. A nation's economic health is dependent upon an educated populace, he says, and the United States is no longer on an educational par with the rest of the developed world.

As we read Thurow, many of us will ask about the validity of test scores as the measure of school quality, about the absolute equation of success and economic competitiveness. We will question the comparability of the American system, which aspires to educate everyone, with other systems around the world that severely limit access to education. As we ask these questions, let us also consider his challenge an opportunity to reassess what we believe and what we are attempting to achieve in our schools and our society.

To accept Thurow's challenge is to undertake the difficult, sometimes painful, task of building our strategic plans on some uncertain assumptions, admitting that we do not have all the answers. As we search for the resources we need, and for ways to be more economical in their use, we can reaffirm the opportunity and capacity we offer our independent school graduates—far out of proportion to their numbers—to lead this nation and influence the course of history.

Increasingly, the histories of our schools, our country, and our world are bound to each other. No longer is there an identifiable gap between the stability of our schools and a healthy local community, between the values, skills, and professional success of our graduates and the viability and security of the United States.

There will not even be six degrees of separation between the people of the world in the 21st century. As never before, we are and will increasingly be interdependent. The independent school must be independent in its governance, else it will no longer be independent. But the independent school, truly to thrive, must also see itself and its progress as part of a whole with community, nation, and world.

It is in this spirit that we seek to engage the issues addressed in this book and to explore the applications of this study on pricing and affordability.

World-Class Schools

Lester Thurow

IN THE NEXT DECADE THOSE OF US IN THE OLD CAPITALIST WORLD ARE GOING to change just as profoundly as those who lived in the old communist world. But we are going to change for very different reasons. *They* are going to change because they *failed*, and *we* are going to change because we *succeeded*. But paradoxically it is harder to make the changes that are necessary because you have succeeded and in your success turned the world upside-down. There is always the temptation to go back to the good old American way without realizing that the world has changed and the good old American way no longer works.

Nowhere is this more true than in American education. In the good old days this system led the world. But doing what it did, and does, it won't lead the world in the years ahead. It must become something different if it is to survive.

What it must become can be summarized in three phrases—outward looking, benchmarking, world-class.

I don't think that there is a world-class high school in the United States. Not even the best are turning out students who could pass the high school exit examinations administered in the rest of the world. No socioeconomic group in American society can claim that at age 18 its children have received a world-class education. Whose students could pass a French baccalaureate exam, a British A level, the Japanese examination, or the German?

Let me give you a quick example. Suppose your child took a math examination and scored in the top one percent of the American distribution. Where do you think your child would fit if he or she were to be slotted into the Japanese distribution for those who had taken the same examination? The answer is that he or she would be at the *50th* percentile. The *best* in America would be merely *average* in Japan. What fraction of Chinese students who take the same examination fall below the US median? The answer is one percent. *Ninety-nine* percent of Chinese children would be above average in the United States (Cabot, 1986).

The reasons for this poor American performance are not hard to find. The rest of the industrial world simply works harder. It goes to school 40 to 70 days per year more than we do. The high school day is two hours longer and more homework is expected. Working harder, they not surprisingly learn more.

The problem is not just in Harlem. It is acute in our best public and private schools. To be the best school in America is not good enough.

In the old days, when the United States constituted a large and comparatively self-sufficient market, an individual's success was almost entirely determined by his or her own ability. In today's global context, the relative strength of the United States economy, dependent on the collective abilities of its individuals and corporations, is an added factor. We all play on a common economic team. Our wages depend upon what we know, but they also depend upon what those who work with us know. The education of my neighbor's children is not just a charitable concern. If they are poorly educated, I will be paid less than I otherwise would be.

In the 19th century, America used two routes to generate its economic success. One was mass compulsory universal education. We were attempting to educate most of our population long before those in the rest of the world even started trying. And that education let American workers who could read and count employ technologies that could not be employed in the rest of the world.

Natural resources were the other route to success used by America in the 19th century. We simply had more of them than anyone else. But in the 21st century they will have become irrelevant, with the advent of the green revolution and the material sciences. Raw materials are now easily purchasable, and prices have been falling dramatically (down 40 percent in the last two decades). Having raw materials won't make you rich; not having them won't condemn you to being poor.

Americans, no matter how poorly educated, also used to have an advantage because they were born in a rich country. Being rich, they worked with more plant and equipment and as a result earned higher wages. But with the advent of a world capital market, a business in Singapore can build a plant that is just as capital-intensive as any that can be built in the United States. Americans won't get higher wages simply because they live in a rich country.

Superior technology, similarly, used to help all Americans. We simply worked with more advanced technologies than those in the rest of the world. But with the advent of "reverse engineering" that advantage has evaporated. The video camera and recorder and the fax were all invented in America, but the jobs, wages, and profits they generated did not appear in America. The rest of the world will be our technological equals in the years ahead.

There is a simple bottom line. Education and skills have always been important: now they are the *only* source of sustainable, long-run competitive advantage.

But the rest of the world has also now copied our system of mass universal compulsory education and upped the intensity. A level of performance that would once have been the world's best is today not world-class. Essentially, the world has served an educational tennis ball into our court with a velocity that we have never heretofore seen. The question is, can we up our intensity and return it?

Not long ago I was at the apprenticeship training program of Mercedes Benz in Germany. About 50 percent of the young people who graduate from high school in Germany but do not go to college go into a four-year apprenticeship training program that involves about two years of education and two years of skill acquisition. Calculus was one of the subjects being studied in that program.

In its plant at Flat Rock, Michigan, the Mazda corporation recently gave a math examination to prospective production workers. Comparison of the math examination with high school curricula and graduation requirements in the state of Michigan makes it clear that an average performance on the math examination would be out of reach of most high school graduates. The examination required at least some junior college education.

The business world is rapidly moving toward requiring a lot more math. Just-in-time inventory techniques and statistical quality control demand average workers who can do simple operations research. To learn what they must learn, they need math that is sophisticated by the standards of the American high school. In today's world, nobody without four years of high school math should even be a high school graduate.

Let me give you an example. The U.S. Bureau of the Census has recently been making 1980 to 1990 comparisons. Researchers asked how many young men 18 to 24 years of age who worked 8 hours per day, 5 days per week, and 52 weeks per year did not earn $12,183 (in 1990 dollars) in 1980 and again in 1990. They picked this number because it represents the poverty line for a family of three and if you cannot earn this sum, you cannot aspire to supporting a family of three at the poverty line level.

In 1980, despite their work effort, 20 percent of those working full-time failed to earn $12,183 dollars. But by 1990 that percentage had risen to 40 percent. For young women the percentage went up from 29 to 48 percent. What President Kennedy said in 1960, "A rising tide lifts all the boats," is no longer true in 1990. In the 1980s the tide went up by 30 percent, the economy grew, but two-thirds of the boats made lower real wages in 1990 than they did in 1980.

The reasons are found in what economists call "factor price equalization." In a global economy, if you don't have skills greater than those of a Korean, you will work for Korean wages. The Korean worker's wages will go up and your wages will go down until they meet. And if average production jobs move to Korea because workers are better educated, the management, engineering, and design jobs that go with them will move also. Falling real wages are now starting to creep up into the bottom of the college distribution. Our lowest-ranking college graduates are no better educated than high school graduates in the rest of the world.

If you look at Americans at age 18, we are all behind—even if we went to the best schools in America. Those of us who go on to college catch up by age 22. We simply work harder in college and spend more money on our colleges. The rest of the world spends too little and tends to take it easy for a year or two after passing those tough high school examinations. Then we add graduate schools that have no analog in the rest of the world, so that by age 28 or 29 some of us are the best educated in the world. For this group of Americans the system is inefficient—it wastes a lot of time between the 7th and 12th grades—but it ultimately works. For the rest of Americans, the 75 percent that do not complete any two-year or four-year college course of instruction, the system is not only inefficient, but worse yet, it ultimately fails.

In changing the American system, the place to begin is with expectations. Have we set world-scale standards by benchmarking vis-à-vis the rest of the world? Recently a study was made comparing the school systems in Minneapolis-St. Paul, Sendai, Japan, and Taipei, Taiwan (Stevenson, 1992). In terms of educational performance, the results in Minneapolis-St. Paul were far below those in the other two cities. But in terms of parental satisfaction with their schools, the highest grades by far were gotten in Minneapolis-St Paul. American parents simply do not have very high expectations as to how much their children should learn. Being good enough relative to the past or to the neighboring town is no longer "good enough."

They were looking inward rather than outward—comparing themselves only with their American neighbors. They had not benchmarked against the rest of the world. They had no idea what it would take to have a world-class school.

Recently I worked with the television program "Sixty Minutes" to do a benchmarking activity vis-à-vis Germany. How does our economy compare with theirs when it comes to strategies for conquering new industries, public infrastructure to promote private productivity, the education and skills of the work force, the level of investment in plant and equipment or research and development, and the degree of innovation?

You ought to do the same for your school. Pick two or three world-class schools outside the United States. Go look at them. See how they are organized. Look at their standards of performance. Compare yourself with them.

Most of the time you will not be able to operate exactly as they operate, but you do have to meet their performance standards. You have to find something in American history, tradition, and culture that lets you get to the same performance standards by age 18. If you don't, you aren't world-class, the United States won't have a world-class economy, and most of us will not have wages equal to those earned by our peers in our most advanced competitor countries.

In Germany the most impressive educational system is not K–12 education, although that is very good, but the apprenticeship training program for the non-college bound. The most impressive thing about it is that mothers and fathers who have received a college education can proudly tell you about their children who are in the apprenticeship system. It is a different system but not an inferior system. In the case of Mercedes Benz, about 80 percent of the students will complete the course and go to work for Mercedes Benz. Their wages will be far above those found in the United States. They will get six weeks of paid vacation. About 10 percent will flunk out. Another 10 percent will be so good that they earn entry into the university system—usually to get engineering degrees.

As part of the "Sixty Minutes" program, we visited the Trumpf Machine tool plant. The head of that company, a multi-billion dollar company, started life in the apprenticeship training program. He was one of those who went on to get an engineering degree, designed some new machine tools while at the university, traded those designs for shares in the company when he came back, and is now both the CEO and the largest shareholder in the company.

There is also a special one-year apprenticeship program that has been designed for university-trained engineers. There are simply things in the program that aren't taught in a university environment but that ought to be learned by those who have had a formal academic education.

These apprenticeship programs have something to teach everyone. They are not dumping grounds for those who cannot "hack it."

Trumpf has a Connecticut factory with a surprising mission. It makes German machine tools less complicated so that American workers can use them. Instead of having a work force that can use the most sophisticated equipment in the world, America now has a work force that cannot learn to run the equipment that can be run elsewhere. In 100 years we have gone from having a work force that could use technologies that were too sophisticated for the rest of the world to having a work force that cannot use the sophisticated technologies found among our most advanced competitors.

For the last 50 years, we Americans have lived in a world without competition. We came out of World War II with such a lead that the rest of the world was forced to play "catch-up." But they have now caught up. From here on out America will not be an automatic economic winner. It will have to compete to win. It may lose.

The key ingredients determining success or failure are going to be education and skills.

Consider this list of what the Japanese think will be the most important high-wage industries of the next few decades: microelectronics, biotechnology, new materials, telecommunications, civilian aircraft manufacturing, machine tools plus robots, and computers plus software. What is interesting about those seven industries, other than the fact that every country would love to have them? The answer, of course, is that they are all brainpower industries. Those industries will be located where someone mobilizes the brainpower to capture them.

You and I are moving from a world where economic activities depended upon Mother Nature into a world where comparative advantage rests on human activity. In the 19th century cotton was grown in the south because the climate and soil were right. It was spun into cloth in New England because that was where the water power was. New York was the biggest city in America because it had the best seaport with the best water connection to the Midwest. Given geographic location of the coal deposits, iron ore, lakes and rivers, Pittsburgh was destined to be the iron and steel capital of America. Similarly, the location of Chicago made it the transportation capital and hog butcher to the world. Texas was oil. There were natural homes for economic activity, and humans were not going to affect economic location very much.

But the seven industries of the future are geography free. They could be anywhere in the world—even on the moon. They will be in those places where someone organizes the brainpower to capture them and where business can find the most skilled work force, regardless of whether one is looking at the top or the bottom of the skill distribution.

Are you outward looking? Have you "benchmarked" against the best schools in the rest of the world? Is your performance world-class? If you cannot answer "yes" to all three questions, then your performance is inadequate even if you are the best school in America.

I

Background: The Project on Pricing and Affordability

Peter Aitken

INTRODUCTION

MARVIN BRESSLER, FORMER PROFESSOR OF SOCIOLOGY AT PRINCETON University, envisages a worst-case scenario for the year 2030 in which most big American cities resemble Beirut in the 1980s (Bressler, 1993). Unchecked, he argues, the polarization of American society into rich and poor could lead to a general collapse of social and political order.

Independent school planning has not traditionally been driven by worst-case scenarios. Nor do we advocate that it should be. But other scenarios less extreme than Bressler's worst case are still daunting. We do believe that the strategic visions of independent schools should be sensitive to the issues involved. Crime, violence, poverty, homelessness, and limited access to education, health care, and employment diminish opportunities for too many Americans. The social and economic costs of these societal dysfunctions drain our resources and sap our vitality as a nation. Because many of these problems tend to be self-perpetuating, we have begun to see the importance of early initiatives in devising effective solutions—Head Start, AFDC, and the like. Education is the quintessential example. How can the ways in which we Americans educate the next generation lift the hopes of more families and children and reduce, rather than exacerbate, the tensions that center on the gap between the rich and the poor, between the "haves" and the "have-nots"?

Bressler contends that more than ever the difference between rich and poor arises from a difference in education. Central tasks in the reform of public elementary and secondary education include enhancing the quality of education for all American children and reducing glaring disparities in educational opportunity for those in rich and poor school districts. For a century, Americans have looked to education to integrate a diverse population and enhance individuals' chances of living healthy, happy, productive lives. The assumptions were that life in the mainstream had much to offer, that standards of living were steadily improving, and that education was the key to full participation. But these assumptions may now be shifting. In the future, education may be associated as much with national security as with individual opportunity. Always the foundation of a free and democratic society, education, Bressler argues, may now assume a new role as a bulwark against societal disintegration.

What is the challenge, here, for independent schools? Put most simply, the challenge is whether independent schools will be part of the problem or part of the solution. With less than one percent of the nation's school-age children enrolled in our schools, will anything that we do make a difference? Well, rightly or wrongly, the independent school community has always argued that the contributions of its graduates to public life—social, political, economic—have had a significance that is disproportionate to their small numbers. Gauged by the socioeconomic status of the families of the children they enroll, independent schools have always been affluent schools. But this has seldom, if ever, been a matter of fundamental choice. Rather, it has been the inevitable result of lofty ideals, as ambitious objectives were translated into costly educational programs. As they recognize the magnitude of the social, demographic, and political changes likely to occur in the next few decades, how will independent schools interpret their self-defined roles, and what implications will these interpretations have for children and for society? Will independent schools steer toward narrower affluence or broader inclusiveness? Who—what kinds of families and children—will have access to independent schools? And particularly, if independent schools desire to chart courses toward greater inclusiveness, what kinds of difficulties will they encounter and what sorts of strategies will prove helpful?

These are some of the central questions that motivated me, as director of research, to write an internal memorandum at NAIS during the winter of 1990–91. The research summarized and the agenda proposed in that memo gave rise to the Project on Pricing and Affordability. Excerpts of the memo were published and sent to member schools in April 1991 as Number 4 in the series of *Briefings* coordinated through the NAIS initiative on Promoting Independent Education. The research reported in the memo was also drawn on in the preparation of an article entitled "The $150,000 Blue Blazer" on the costs of private schools, which appeared in *Investment Vision*, a publication of Fidelity Investments for its mutual fund customers (Doudna, 1991).

Key findings from the original research are reported throughout the remainder of this chapter. In the ensuing sections, we describe the goals of the Project on Pricing and Affordability; we define the affordability problem with reference to statistics, citing recent trends in enrollments, tuitions, and school and family budgets for the independent school community and for the country as a whole; we discuss rationales behind financial assistance programs and question whether these can offer adequate solutions to the access challenge in future years; finally, we outline the development of a prototype independent school affordability index.

GOALS OF THE PROJECT ON PRICING AND AFFORDABILITY

THE PROJECT ON PRICING AND AFFORDABILITY WAS ULTIMATELY DRIVEN by concern about a fundamental and potentially damaging tension between independent schools' goals of high quality, on the one hand, and broad access, on the other. High quality implies increasing and competitive faculty salaries and these, in turn, exert upward pressure on tuitions. Broad access calls for lower tuitions or for enough financial assistance to sustain enrollments substantially more diverse in socioeconomic terms, on average, than today's.

NAIS undertook several projects on faculty compensation during the 1980s, which are summarized later in this chapter. While NAIS' Department of Diversity and Multicultural Services has taken important initiatives with regard to cultural, ethnic, and racial dimensions of the work toward expanded access, the Project on Pricing and Affordability has addressed its economic dimensions. When we use the term "access" in this publication, we will be referring to the economic factors that contribute to determining the ability of families to send their children to independent schools.

The goals of the Project on Pricing and Affordability were:

- To document the recent history of tuitions in independent schools, including the role of financial aid;
- To develop an independent school affordability index that would capture in an intuitively understandable way the relationship between tuitions and the capacity of American families to pay them;
- To assemble a research team to assist in (a) exploring those aspects of independent school financial structure and operations with the greatest potential to yield significant reductions in cost per student and (b) developing a variety of models or scenarios, offering avenues to reduced per-student costs, that will be helpful to schools as they undertake their own planning and policy development.

The project is a response to long-term demographic projections that show significant changes in the racial, ethnic, and economic makeup of the American population in the next few decades. The members of the project's Research Group, who have worked together since early 1992, are motivated by the conviction that independent schools must adapt for both educational and political reasons to these changes. We also believe that appropriate adaptation will require significant changes in the way independent schools operate, that independent schools are inherently and traditionally conservative, and that such changes will not be easy to accomplish. In view of these considerations, we have felt that our own most useful contributions can be to offer a variety of analytical insights into school operations and to suggest some new ways of thinking about old, familiar problems.

There are, of course, no panaceas, no quick fixes. But we believe that effective new strategies are most likely to emerge from collective efforts to examine hitherto unexamined articles of faith, to challenge sacred cows, to look at independent schools from unusual perspectives, and to think about them in unusual ways. Our overall aim has been to launch and sustain a new dialogue. With the publication of this book, we invite the independent school community to engage in the dialogue, searching for an understanding of common ground with regard to the balance between commitments to the children who attend our schools and commitments to the broader society.

KEY STATISTICS

Current Numbers:

We begin with a brief summary of the relevant numbers, treating independent schools globally, i.e., as one large group. While this approach masks individual variations, it serves to identify and define selected characteristics of independent schools in general terms and in relation to broadly descriptive characteristics of the U.S. population.

First, students and school enrollments. NAIS member independent schools in the United States enroll a total of 375,000 students, in approximately equal numbers of girls and boys. This number is less than one percent of the 47 million children of school age in the United States. Eighty-three percent of NAIS students are in coeducational schools; 89 percent are day students; 65 percent attend schools in New England, the East and Middle Atlantic states, and the Southeast; 12 percent are in schools in the Midwest; and 23 percent go to schools in the West and Southwest. About 40,000 students are boarding students. Nearly half of all students attend schools with enrollments below 500; a third go to schools with enrollments over 700.

Tuitions in independent schools range from about $1,200 to $22,500, averaging about $7,500 for day students and $16,500 for boarders. Many schools set graduated tuitions, charging less for children in the lower grades and more for those in the upper grades. Tuitions for five-day boarding programs and half-day preschool and kindergarten programs are usually lower than the average figures quoted above.

Typically, independent schools derive 60 to 80 percent of their operating revenues from tuitions and fees and 10 to 25 percent from gifts, grants, and investment income. The theoretical gross tuition revenue of all NAIS member schools combined is about $3.5 billion.

Characteristically, salaries, benefits, and payroll taxes account for between 50 and 70 percent of total expenses. The costs of energy, food, physical plant, instructional and administrative programs, and miscellaneous other activities represent 25 to 40 percent of expenses. Financial aid expense amounts to between 6 and 10 percent of total expense.

The median U.S. family income is about $40,000 (U.S. Bureau of the Census, 1991, Table 729).† The top-income quintile begins at about $70,000 (op. cit., Table 731). The average discretionary expenditures of husband-and-wife families with children of school age are about $6,400 per year (op. cit., Table 718). (Discretionary expenditures are expenditures other than those for food, housing, fuel, clothes, transportation, health care, pensions, social security, and taxes.) Seventy percent of all school-age children live in two-parent households (*Numbers News*, 1993). Assuming

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† The income and expenditure figures in this paragraph are estimates based on the most recently available demographic data. For example, the $40,000 figure for median U.S. family income is estimated by assuming a 3% annual increase in the 1989 figure, which was $34,000. The references in parentheses are to the original data.

that tuitions are paid for largely out of income, it is clear that only a small proportion of families can afford one or two tuitions at independent schools. Census data indicate that there are about 1.5 million households, representing perhaps 3 million children, with after-tax incomes above $75,000 (U.S. Bureau of the Census, 1988). It is from this group, therefore, that the majority of full-tuition-paying students will come. In general, children from families other than those in a small upper segment of the top-income quintile will have access to independent schools only if financial assistance is available.

In the 1991–92 school year, NAIS member independent schools awarded $354 million, or about 10 percent of their gross revenues, in financial assistance to 71,500 students, representing 19 percent of their total enrollment. Of the 71,500 students, 12,000 were the children of faculty and staff members for whom financial assistance was in the form of tuition remission. A further 4,500 students received "no-need" awards. The remainder, 55,000 children, representing 15 percent of total enrollment in independent schools, were recipients of need-based financial aid. The families of four out of every five children attending independent schools pay full tuitions.

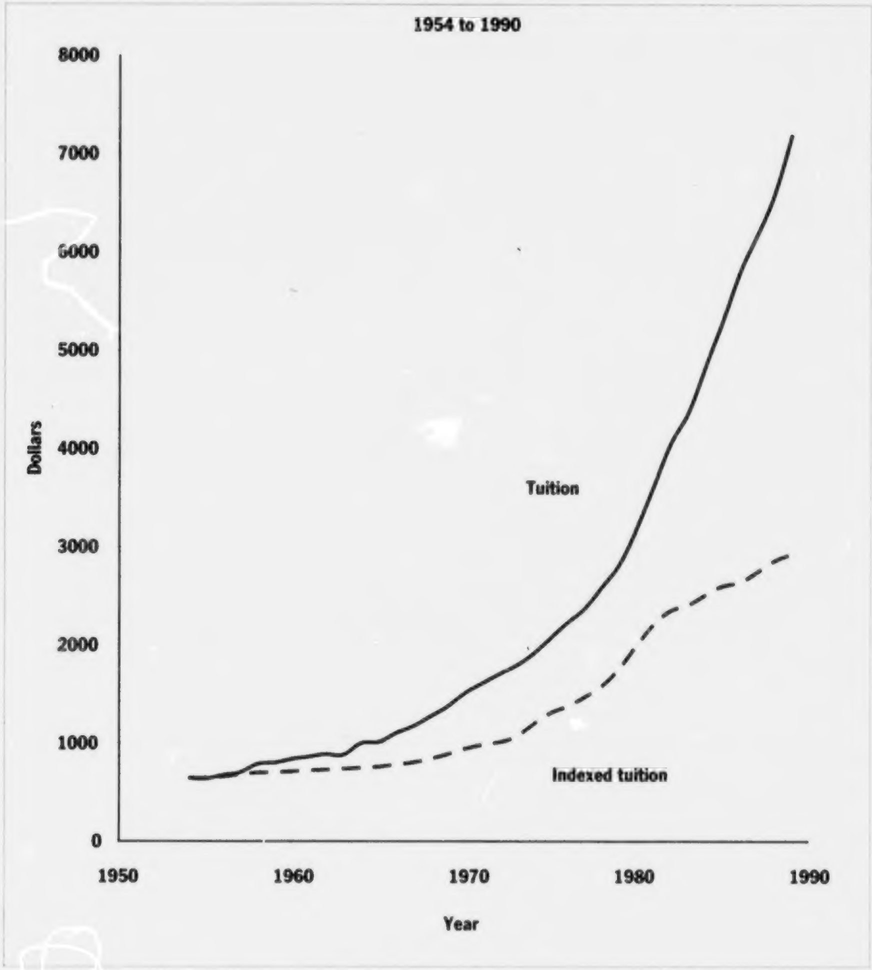
Recent Trends:

FROM 1954 TO 1980, independent school tuitions increased at a rate roughly comparable with the rate of increase in the cost of living. Figures 1 and 2 show tuition growth against the consumer price index for day and boarding schools for the period 1954–1990. The upper line in each chart shows average 12th grade tuitions, while the lower line, labeled "indexed tuition," shows how these same tuitions would have increased if they had been indexed to the consumer price index beginning in 1954. It can be seen that the rate of tuition increase was a little higher than that of the consumer price index in the earlier years and lower in the 1970s. Beginning in about 1980, however, the rate of tuition increase was dramatically greater than that of the consumer price index.

Also beginning in the early 1980s and continuing throughout the decade, many independent schools undertook major initiatives to improve faculty compensation. Supporting and encouraging such efforts, NAIS published *Faculty Salary Systems in Independent Schools* (Littleford and Lee, 1983) and established the Task Force on Faculty Compensation in 1985. The Task Force published *Profession At Risk* in 1988 (Goldman, 1988) and a video with the same title in 1989. Figure 3 shows median faculty salaries in NAIS day schools for the period 1954–1990. The obvious similarity between these charts and those for tuitions reflects the labor intensity and tuition-driven character of independent schools. It suggests that the unprecedented rate of increase in tuitions during the 1980s was related to similarly unprecedented rates of increase in faculty salaries in the same period.

Efforts to improve faculty salaries were principally inspired by concerns about the ability of independent schools to attract and retain competent and dedicated teachers. Salaries in many public school systems, often already higher than those in independent schools, were increasing rapidly in the period following the publication of *A Na-*

Figure 1 Tuitions, NAIS Day Schools (12th Grade)



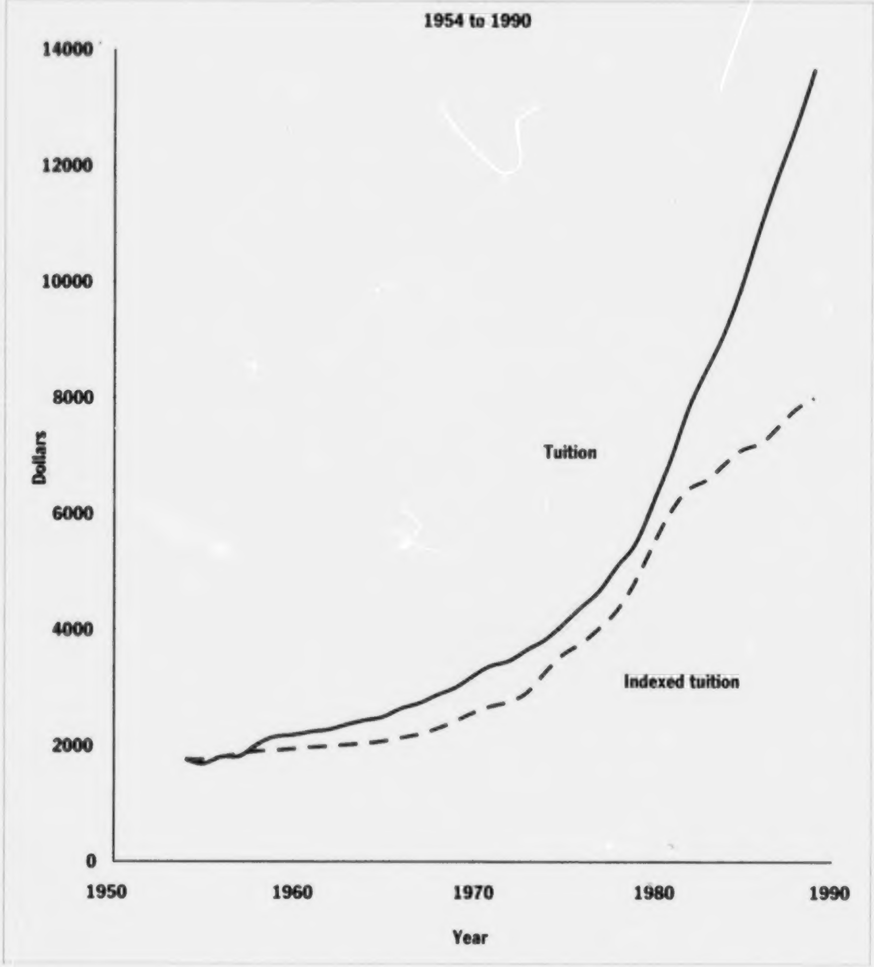
Note: Prior to 1988–89, the chart shows the weighted average of mean 12th grade day tuitions for various categories of schools. For 1988–89 and 1989–90, it shows median 12th grade day tuitions.

Source: Annual statistics reports from REPORT NO. 32, National Council of Independent Schools, December 1954, to NAIS STATISTICS FALL 1989.

tion At Risk (National Commission on Excellence in Education, 1983), and some teachers were leaving or planning to leave independent schools in order to teach in public schools. Others were leaving or planning to leave the profession altogether, unable to make workable family financial plans at their projected salary levels. Efforts by many independent schools to improve faculty compensation were directly related to their commitment to sustaining the quality of their educational programs. The NAIS mission statement captures the flavor of that commitment:

> "...to serve and strengthen its member schools and associations by articulating and promoting high standards of educational quality..."

Figure 2 Tuitions, NAIS Boarding Schools (12th Grade)



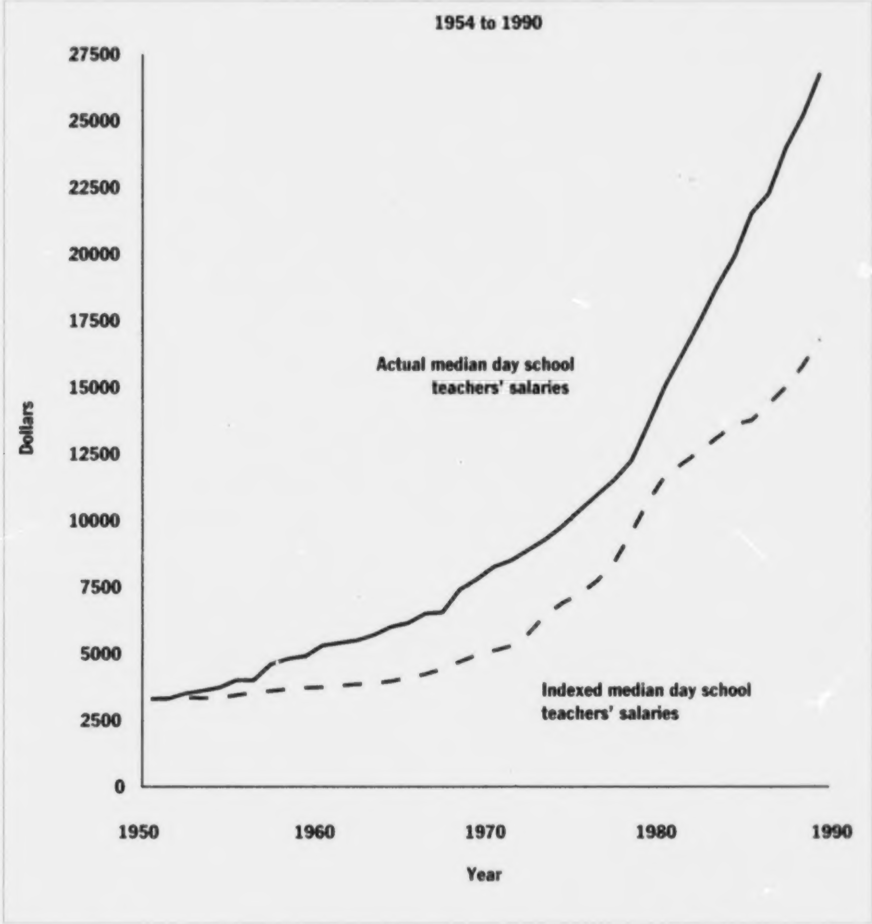
Note: Prior to 1988–89, the chart shows the weighted average of mean 12th grade boarding tuitions for various categories of schools. For 1988–89 and 1989–90, it shows median 12th grade boarding tuitions.

Source: Annual statistics reports from REPORT NO. 32, National Council of Independent Schools, December 1954, to NAIS STATISTICS FALL 1989.

By 1990, a decade of work on faculty salaries had begun to yield results. Collectively, independent schools had made significant progress: average faculty salaries had increased in real terms by 25 percent since 1980. On the other hand, the closely related upward pressure on tuitions, unfortunately coinciding with a short-term demographic shrinkage in the total number of school-age children and with the onset of a recession, had begun to be reflected in declining applications, under-enrollment, and increasing numbers of requests for financial assistance.

The Project on Pricing and Affordability was undertaken to focus innovative analytic thinking on the fundamental tension between the goals of enhanced access to independent schools and high quality, itself linked to improved compensation for independent

Figure 3 Teachers' Salaries and the Consumer Price Index (NAIS Day Schools)



Source: Annual statistics reports from REPORT NO. 32, National Council of Independent Schools, December 1954, to NAIS STATISTICS FALL 1989.

school teachers. While significant gains had been recorded in the area of teachers' salaries during the 1980s, it was not so clear that advances had been made with regard to access.

This is not because our schools aren't deeply committed to enhancing access. The project's study of the dramatic increases in financial aid offered by independent schools over approximately this same period of 10 years indicates they have in fact made a tremendous, even heroic, effort to try to increase access.

To gauge progress in the area of accessibility, the project's Research Group looked at the number of financial assistance recipients as a proportion of total enrollment. In 1981–82, \$89 million, representing 7.1 percent of operating budget expenses, was awarded to 39,000 financial assistance recipients who represented 16.4 percent of total enrollment in reporting schools (*NAIS Statistics Spring 1983*, Table 7). Estimates of the corresponding figures for 1991–92 are \$353 million, which is 10.5 percent of operating budget expenses, to 72,000 students, representing 20.8 percent of total enrollment in reporting schools (*NAIS Statistics 1992*, Tables 61, 62, 63, and 68).†† The number of financial assistance recipients as a proportion of total enrollment increased by about 27 percent (from 16.4 percent to 19.5 percent of total enrollment). But the *real* (i.e. inflation-adjusted) increase in schools' aggregate dollar commitment to financial assistance was 160 percent in the same period. During this time, the combined cost of financial assistance programs as a proportion of schools' total operating expenses increased by nearly 50 percent (from 7.1 percent to 10.5 percent). These trends are illustrated in charts in chapter V, "Financial Assistance: How Is It Working and Where Are We Headed?"

There are limitations to using the proportion of total enrollment represented by financial assistance recipients as a proxy for an index of access. For example, if tuitions rise faster than family incomes, financial assistance recipients might represent a growing proportion of total enrollment, yet be drawn from a higher and narrower income bracket rather than a lower and broader one. Nonetheless, the dollar cost and the impact on operating budgets related to the gains achieved during the 1980s in financial aid and tuition remission programs represent a valiant commitment by independent schools.

At the same time they are a cause for some concern about the future. Continued gains look so expensive that it seems possible schools will soon reach a collective limit in their efforts to expand access. If the number of financial assistance recipients stabilizes at 15 to 20 percent of total enrollment, independent schools, seen as a whole, will continue to be basically affluent institutions whose financial aid programs stem from a spirit of noblesse oblige. There is some risk, in this context, that financial aid recipients will be second-class citizens and that the persisting affluent climate of the schools may be felt to identify them more with the rich/poor problem than with efforts to solve it.

The magnitude of independent schools' collective commitment to financial assistance in the face of these difficulties suggests policies and practices driven by powerful underlying rationales. We offer some reflections on these before discussing the development of a more reliable indicator of access and affordability.

RATIONALES BEHIND FINANCIAL ASSISTANCE PROGRAMS

WHY DO INDEPENDENT SCHOOLS OFFER FINANCIAL ASSISTANCE? Three rationales are commonly put forward. The first points to the importance of educating all children in a context where they will be ex-

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†† Difficulties are encountered in comparing financial assistance data for 1981–82 with data for 1991–92. First, while the survey instrument used for the 1981–82 data requests information on all students receiving aid, and the NAIS statistical publication for that year explicitly states that the figures reported include "both tuition remission and merit scholarship amounts," a degree of ambiguity in NAIS' own definition of "aid" may have compromised the integrity of the data. Second, the number of schools reporting no-need or merit awards for 1991–92 was only about one quarter of the number providing data on need-based financial aid and tuition remission. For this reason, we have estimates rather than exact figures for the proportion of total enrollment represented by financial assistance recipients and for the proportion of total operating expenses represented by the aggregate dollar amount of financial assistance awards.

posed to and helped to understand others from a wide range of backgrounds in preparation for adult lives in an increasingly complex and pluralistic society. The second argues that the academic quality of the school experience is enhanced for all by extending the school's ability to enroll intellectually capable students. The third justification for financial assistance programs is that they represent a practical strategy for achieving full enrollment. Assuming that more students mean more net revenue, full enrollment helps to balance the budget and makes good business sense.

While we cannot always determine exactly which rationales for financial assistance may be operating within our independent schools, there is evidence to suggest that social development objectives and academic goals, rather than pragmatic concerns for full enrollment and balanced budgets, are the primary driving forces. For example, independent schools frequently indicate that their financial assistance programs exist "to help students enroll whose families might not otherwise be able to afford the tuitions." The substantially increased commitment to financial assistance during the 1980s—a period of economic expansion and increasing affluence for upper-income Americans during which independent schools, had they wished, could have increased their relative proportions of full-tuition-paying students and reduced the amount of "foregone" tuition revenue—points to socioeconomic and academic motivations rather than to budget-balancing concerns. The prominence of multiculturalism and diversity among the priorities being addressed by many independent schools reflects an emphasis on expanding the socioeconomic profile of school enrollments. The widespread commitment of independent schools to diversifying their enrollments is a response to their perceptions of substantial current and projected demographic changes and reflects their desire to sustain educational programs that are sensitive to these changes. NAIS' own mission statement is explicit about access, just as it is about quality:

> " ... to advocate broad access for students by affirming the principles of diversity, choice, and opportunity."

The emphasis on access stems from a concern about exclusion. It expresses a commitment to work toward ways of making it easier for children and families historically underrepresented in independent schools to join in, contribute to, and benefit from the life and work of these schools.

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At one level the foregoing review of key statistics and rationales behind financial assistance programs tells us nothing we didn't already know. Independent schools are inherently expensive and, paid for with after-tax dollars, accessible only to a narrow, highly affluent stratum of society. But the picture we have established is also the starting point for a more important inquiry. We need to know whether independent schools are growing more accessible or less accessible. To try to answer this question, we further explored recent trends in tuitions, family finances, and financial assistance and developed an index to measure independent school "affordability."

INDEPENDENT SCHOOL AFFORDABILITY INDEX

As WE NOTED, THE RATIO OF FINANCIAL ASSISTANCE RECIPIENTS TO total enrollment in independent schools is an unreliable index of access if rates of change in tuitions and family incomes are significantly different.

We needed some other gauge or indicator of progress towards access—an "independent school affordability index" that would give us a more sophisticated sense of the relationship between tuition levels and the capacity of U.S. families to pay. The development of this index, described in the following paragraphs, is a first attempt to capture this connection in quantitative terms.

Two points should be emphasized at the outset. First, while measures of average U.S. family income and net worth are used in developing the index, there is no implication that general access to independent schools for U.S. families of average financial resources is just around the corner. This is simply not a realistic target in the near future. But average family financial resources remain an important point of reference because the Project on Pricing and Affordability reflects a sensitivity to the long-term relationship between independent schools and American society in general. An affordability index enabling us to see ourselves in relation to the U.S. population will serve as an important reality test.

Second, the study of affordability is not an exact science. Judgments about such issues as how much of a family's financial resources can or should be allocated to independent school tuitions are ultimately arbitrary and subjective. In this case, we have relied heavily on the sophisticated methodology evolved by the School and Student Service for Financial Aid (SSS), operated for NAIS by the Educational Testing Service in Princeton, New Jersey. Our conclusions accordingly reflect the assumptions and generalizations that are built into the SSS calculations.

Moreover, the use of published estimates of family incomes and net worth introduces additional complications. Census definitions of "family" for income reporting purposes may well mask financial resources that are brought into play by the families of many children attending independent schools. Consider, for example, the roles of grandparents and trust funds. And periodic estimates of net worth undertaken by the Census Bureau and the Federal Reserve Board rest on a variety of definitions and assumptions that we have made no attempt to reconcile with definitions of financial assets used in the SSS calculation.

The independent school affordability index, then, is a rough estimate, resting on a number of assumptions and generalizations, of the proportion of U.S. families that can "afford" to pay tuitions to send their children to independent schools.

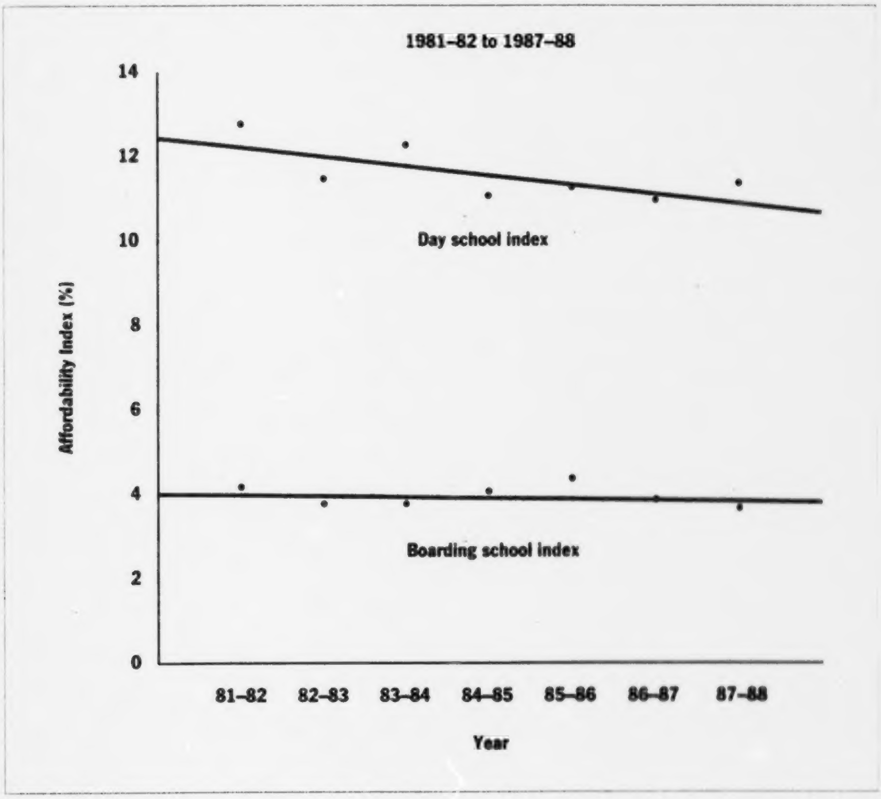
What do we mean by "afford?" The standard SSS calculation uses financial and other information about a family to determine the "estimated family contribution toward the educational expenses" of a child. If this "estimated family contribution toward educational expenses" just matches the tuition at the school to which the child is applying, then this family can just "afford" this school.

Using "afford" in this way, we now generalize about tuitions and about families in order to arrive at an estimate of the proportion of U.S. families that can afford independent school tuitions. To generalize about independent schools, we use average 12th grade tuitions. To generalize about U.S. families, we assume a two-parent, two-earner family with parents aged 38 and with net worth equal to the median net worth of U.S. families. We further assume that the family has a second child attending a tuition-charging institution.

Based on these and several other technical assumptions, the SSS calculation indicates an after-tax family income level at which the estimated contribution to educational expenses just matches the average 12th grade tuition. We can think of this income level as a threshold level. For families with after-tax incomes above this threshold, independent schools are affordable. For the rest, they are not. Finally, referring to Census data on the distribution of after-tax family incomes, we can determine what proportion of U.S. families falls above the "threshold" level. This proportion then becomes the independent school affordability index.

The affordability index during the late 1980s was about 11 percent for day schools and about 4 percent for boarding schools. Figure 4 shows the values of the day and boarding school affordability indices for selected years up to 1989.

Figure 4 Independent School Affordability Index for Day and Boarding Schools



The index is the percentage of U.S. families that can "afford" the median 12th grade tuition.

Main assumptions are: two parents both earning, older parent aged 38, family net worth equivalent to the median for U.S. families, two children attending tuition-charging institutions.

The independent school affordability index should be considered a "work in progress." A 1992 U.S. Census Bureau study of family net worth was being prepared for publication during the second half of 1993. As new data become available, both day and boarding affordability indices should be updated with the help of the SSS staff in Princeton. Definitions and calculation methodology may be refined in future years and recalculations made retrospectively, as is periodically done with the consumer price index. But most important of all, the affordability index should work its way into the language of long-term planning conversations at schools.

The values of the index indicate that independent school tuitions are affordable to only a small proportion of U.S. families. They further suggest that this proportion is declining. Independent schools cannot realistically expect to become *affordable* to average families overnight or even in the near future. But if independent schools are to be part of the solution rather than part of the problem of socioeconomic polarization, then they must find a way to *reverse the decline in affordability.* The present level of the index is the result of history. The direction and pace of its change in the years ahead will be indicators of our collective commitment to enhanced access and inclusion.

II

How to Use this Book

Peter Aitken
Nancy Kelley
Susan Stone

WHAT'S IN THE BOOK

THUS FAR, WE HAVE USED A KIND OF ZOOM LENS IN DISCUSSING THE question of access to independent schools. First, we reflected on national issues against a global background. Then we located the issue of access to independent schools in a national context. Finally, we focused in on student numbers, tuitions, financial assistance, teachers' salaries, and measures of family income and wealth to describe the inherent tension between goals for high quality in and broad access to independent schools. As we prepare to shift our focus from describing the problem to thinking about responsive strategies, we pause to outline the structure of the book and to offer some suggestions about how it may be used in schools.

In the ensuing chapters we explore some of the major components of independent school costs from planning and structural perspectives. In particular, we focus on analytic approaches that will help schools to project their own expenses and to explore and understand the implications of potential policy changes. It is important, however, to make a distinction at the outset. In looking for ways to reduce these expenses, we are seeking to reverse the trend of declining affordability with its implication of the increasing marginalization of the independent school sector. At the same time, we fully recognize that the traditional commitment of most independent schools to educating the whole child in a highly personal environment will continue to make these institutions expensive. Individual schools will develop individual solutions. But these will almost certainly need to include a combination of reduced per-student costs, continued financial assistance, and increased revenues from non-tuition sources.

Tuitions can be kept down by keeping costs down or by increasing non-tuition revenues. We have chosen to focus on the cost side because schools share many structural and programmatic characteristics with cost implications while non-tuition revenue generation, usually depending on the philanthropic capacity of parents and alumni/ae and on ancillary uses of physical plant, tends to be more institutionally idiosyncratic. Furthermore, we have chosen to concentrate on selected aspects of school expense

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patterns—long-range financial equilibrium, financial assistance programs, class size, and the cost implications of educational program variety and small institutional scale. While expenses associated with physical plant and with a variety of auxiliary programs and activities can represent significant portions of operating budgets, they also tend to be idiosyncratic and therefore less amenable to the kind of general analytic treatment we can offer.

Independence in independent schools has two aspects. Frequently, at board meetings when a school is considering a new initiative, trustees will ask, "How do they do this at other schools and what can we learn from their experience?" The question highlights these two faces of independence. On the one hand, independence is cherished for the freedom it implies to run a school and undertake the education of children in accordance with the particular beliefs and values of the school community. On the other hand, this same independence, combined with characteristically small size and geographic dispersion, can make independent schools experts at reinventing the wheel. Learning from each other is, of course, the best insurance against reinventing wheels. Conferences, workshops, other professional development experiences, and numerous professional publications are aimed at helping independent schools learn from each other. This book represents another such tool. As you work with it to develop plans and approach decisions in your own school, remember there are at least two kinds of learning from others that are important: the solutions they developed to problems and challenges that appear similar to our own, and the processes they worked through together in developing these solutions.

In the second part of this chapter, we discuss issues of process. Long-term cost containment or cost reduction efforts are potentially threatening. They can threaten cherished programs in which talented people have invested years of their working lives. They can threaten people's jobs. And because of these threats, they can threaten morale. The long-term organizational change on which the project focuses requires the support and understanding of key constituencies such as teachers, parents, administrators, and trustees. Accordingly, this chapter includes suggestions about involving these stakeholders in the process; it also suggests ways for schools to make most effective use of this book as they aim toward the goals we have identified.

One very familiar perspective on practices in other institutions from which we may be able to learn comes through using and interpreting comparative institutional data. In chapter III, five examples of this kind of analysis are offered. First, we briefly discuss the NAIS statistical database and describe the roles of published NAIS data and custom statistical reports in supporting policy formulation and decision-making. Second, we show how data on school financial operations can offer insights into the potential benefits or perils of "downsizing." Third, we report selected findings from a study of "outliers" among independent schools in the NAIS statistical database. Fourth, we discuss the impact of federal, state, and local tax policies on the true costs of public schooling and of financial assistance programs in the private school sector. Fifth, we apply a resource allocation model to two independent schools and compare the results with those from public and parochial schools.

In chapter IV, we discuss the application of the financial equilibrium concept to independent schools. Originating in the 1970s and 1980s, this concept has been adopted as a guiding discipline in strategic planning by many colleges and universities. Financial equilibrium emphasizes the requirement that financial projections linking strategic plans to the budget process embody preservation of the purchasing power of endowments, of the value of buildings and plant, and of balanced growth rates in revenues and expenses. In particular, we suggest how to use the information derived from applying the financial equilibrium model to an independent school, with special emphasis on tuition forecasting.

Consideration of affordability leads quickly to an examination of the role of financial assistance. Chapter V, "Financial Assistance: How Are We Doing and Where Are We Headed?" explores the goals and purposes of financial assistance programs and offers suggestions about how schools can conduct their own policy dialogues.

Chapter VI, "Class Size and Individual Attention: Reexamining Articles of Faith," explores aspects of the connection between student-teacher ratio and overall costs. In particular, it addresses the concept of "individual attention" and the largely unexamined assumption that this concept goes hand in hand with small class size. These issues are discussed in the context of some international comparisons.

In chapter VII we describe several processes through which a school can examine its allocation of resources in relation to its mission statement and to market forces and thereby establish a basis for possible changes in priorities and expenditures. School programs are determined by the interplay of institutional mission and the forces of the marketplace. If either influence is dominant and the school unresponsive to the other, vulnerabilities can quickly develop. A school that clings to an enshrined mission in the face of clear, persistent, negative signals from the marketplace is headed straight for trouble. A school that nimbly follows the marketplace, neglecting to reflect on its evolution from the perspective of its mission statement, may suddenly find that it has lost its way. This is a uniquely important chapter, in which our struggle with potentially irreconcilable dichotomies—quality and access, mission and market forces—is most clearly expressed.

Chapter VIII offers a brief discussion of some of the difficulties encountered in the Research Group's work and identifies additional issues and perspectives that should command attention in a longer-term research agenda.

GENERAL THOUGHTS ABOUT PROCESS

THE ANALYTICAL TOOLS WE OFFER IN THIS BOOK ARE DESIGNED TO facilitate viewing a school through several sets of lenses, to provide different ways of assessing school operations, and to educate, or reeducate, a school community regarding the nature of the institution, its costs, and perceived affordability. The challenges of this analysis and the expectations for results are very different from those involved in other processes that schools are familiar with, such as the Multicultural Assessment Plan, a reaccreditation self-study, or a strategic planning process. Yet despite these differences, our examination of pricing and affordability parallels such processes as strategic planning in its commitment to developing a unified approach to the future that is sustainable over time.

Independent schools are intensely collegial institutions. That is, they comprise a number of different groups who are intensely invested in school issues and rightfully feel they own a piece of the decision-making process. Each school has a wide variety of stakeholders, including faculty, administrators, staff, students, parents, grandparents, alumni/ae, and friends. Therefore, when a school is examining its fundamental beliefs and resulting implications for operations, wise leadership will seek a process that includes all these various owners of the school.

Given the multifaceted nature of our independent school communities, an examination of the factors influencing pricing and affordability is not likely in any school to be a straightforward, linear process with clearly defined outcomes. The essential motivator for change is dissatisfaction with the status quo. With pricing and affordability, as with any other issue, some people are concerned and seek change, others may be wedded to the status quo, and yet others may be indifferent. Even among those advocating change and viewing it as affecting an institution positively, the process itself is likely to generate some surprises and negative reactions. For all these reasons, those guiding the planning process will do well to work to develop an understanding of the institution's current strengths and weaknesses that is as widely shared as possible, and to build a consensus about priorities for the future.

Therefore, before beginning to use this book, schools should ask some important questions:

- Why are we doing this? What do we hope to accomplish?
- Where does the responsibility for decision-making lie?
- How and when do we involve each of the school's distinct constituencies?
- Who has what agendas and how can we avoid politicizing the work?
- How do we manage the positive and negative expectations that will be raised?
- What are the most effective and efficient ways of communicating both issues and findings throughout the school?
- What is our time frame?

In chapter VII, we propose specific methods and models to use in working through an analysis of school mission. A list of elements that promote good process in schools and that are worth considering in all aspects of a pricing and affordability study should also include the following:

- Allowing for broad participation in research and discussion to engender a shared sense of ownership;
- Preparing for effective communication throughout the school community about why we're looking at issues related to pricing and affordability and how we might use the findings;
- Focusing on the future rather than continually lamenting the past or using it as a justification for inertia;

- Fostering a climate that supports creativity as well as analysis and synthesis of data and information;
- Addressing external factors that may affect the school in the future (such as economic, political, and social issues and educational trends and research) along with internal institutional issues that are the focus of the analytical methods and models in this book;
- Clarifying where decisions will be made and developing an incremental, inclusive plan to institute change and encourage innovation;
- Building in the potential for change in the mission, should that be indicated;
- Projecting a vision, mission, and goals that are valid and consistent and that enjoy strong leadership support.

SPECIFIC SUGGESTIONS FOR APPROACHING THIS MATERIAL

THE DRIVING FORCE BEHIND THE PROJECT ON PRICING AND AFFORDability has been to develop a process and a product that will be both practical and effective in helping independent schools examine the multiple and complex financial issues facing them today. In our thinking about this task, important models have ranged from the School Scholarship Service application to the IRS 1040 form and the strategic planning process conceptualized by Susan Stone. Each of these helps a variety of individuals to use different approaches, yet arrive at results that are specific to their own contexts and needs. This combination of uniform format with flexibility in use became a guiding model in our work to develop this book. We make no attempt to offer cookie-cutter recipes for financial management; rather, we offer a variety of insights, perspectives, and analytic models that can be used in numerous ways by schools.

A second principle behind this book is a simple one. The more work that a school does in preparing and analyzing the data needed to follow each of the approaches described in this book, the more valuable the results will be. This seems a fitting standard for people who work in schools where, on a daily basis, we argue this same principle with our students. It is just as valid for those who engage the tough questions that come with running schools and who explore the analytical processes offered in this book as it is for students writing a term paper.

A third principle in using this book is to decide early on how much time and energy your school can invest in the process. The book is divided into self-contained chapters. The adage that "less is more" should certainly be kept in mind as you decide which of the several different topics you want to address. Suggested below are a number of different ways in which planners and decision-makers in schools can draw on the ideas in this book and adapt them to their own contexts.

Comprehensive Financial Planning

THERE ARE TIMES IN RELATION TO PLANNING and development cycles in schools when it is appropriate to identify and address a wide range of fundamental policy, structural, and financial issues. In these circumstances a comprehensive financial planning team might well investigate all of the issues presented in this book, and others in addition. Such a team would include trustees, parents, alumni/ae, faculty, staff, and administrators. Clearly, embarking on such an extensive analysis is a major undertaking. Some institutions might find an appropriate vehicle for this process in the long-range planning committee. Discrete parts of the investigation could be assigned to other standing committees of the board or to the administration. Schools undertaking their own analytic work at this level should reap long-term benefits.

Analysis of Specific Issues

EXISTING COMMITTEES OR ADMINISTRATIVE GROUPS within the school will find particular sections of the book of value. For example, the Financial Aid Committee might concentrate on chapter V. School division heads could focus on the work on class size presented in chapter VI. The business officer or the Finance Committee could review the approaches to financial equilibrium in chapter IV.

Comparative Perspectives

THE COMPARATIVE PERSPECTIVES OFFERED in several places throughout this book offer provocative references that can serve as points of departure for conversations about a wide variety of school operating characteristics. Those that are based on published NAIS statistics are in a form familiar to planners and policy-makers in schools. Others, drawing on new data or formulated in new ways, will suggest new lines of thinking.

• • •

We have tried to develop and suggest some new processes for addressing what sometimes feel like old and intractable problems. The chapters in this book are largely self-contained. A sequential reading, from cover to cover, is not necessary for an understanding of the material on a specific topic. We believe the book will be useful if drawn on section by section in response to an individual school's operational and planning needs.

III

Where Do the Dollars Go?

INTRODUCTION

Peter Aitken

IN THIS CHAPTER, WE WILL DISCUSS SOME OF THE MAIN CHARACTERISTICS OF independent school expense patterns. Our objective is to establish a background understanding based on a variety of different perspectives against which to present, in subsequent chapters, analytic treatments of long-range financial equilibrium, financial assistance programs, class size and individual attention, and the relation between program, mission, and market forces.

First, we review and discuss recent analyses of school budgets as presented in the published *NAIS Statistics 1992*. The aim, here, is to highlight key revenue and expense issues with the most significant bearing on our tuition reduction target.

This overview is followed by a brief discussion of "downsizing," supported by an analysis of the relationship between school size (enrollment), school type, and net revenue per student for the 1989–90 school year.

Third, we focus attention on schools in which selected operating expenses vary sharply from the norm. NAIS statistics have traditionally emphasized averages and medians, descriptive characteristics that statisticians call "measures of central tendency." But significant possibilities for learning exist if we examine NAIS survey data on "outlier" schools—schools that reported unusually high or low numbers in response to survey questions about operating characteristics.

Fourth, we look at the impact of tax policy on independent school financial aid programs. By exploring the choices made by families about where to live, what housing costs to assume, and what taxes to pay, we see that public schools in affluent communities charge high de facto "tuitions." And, by looking at financial aid programs from the tax policy perspective, we understand their substantial—and hidden—extra costs to parents and to schools.

In the final section of this chapter, we report on the application to two independent schools of a resource allocation model developed for analyzing expenditure patterns in public schools and public school systems. The aim is to broaden the perspective from which we view independent school cost structure. Again, the underlying rationale is that as we look for avenues that may lead to significant change in independent school expense patterns and cost structures, we need to explore schools that do things differently rather than those that operate similarly.

INDEPENDENT SCHOOL BUDGETS

Peter Aitken

ALTHOUGH THE PROJECT ON PRICING AND AFFORDABILITY FOCUSES ALmost exclusively on costs rather than revenues, it is important to note the contribution of tuition and fee income to overall revenues, since tuition and fee income is tied closely to student numbers and these, in turn, are significant in the discussion of costs. The following discussion refers to the financial operations data in Table 1 (reprinted from *NAIS Statistics 1992,* table 71, pg. 114). This table shows average revenue and expense data on a per-student basis for each of six school categories: elementary day schools, combined elementary-secondary day schools, secondary day schools, day-boarding schools, boarding-day schools, and boarding schools (for definitions of these categories, see the annual NAIS Statistics publications). Tuition and fee income contributes from 60 to 80 percent of total revenues. For the first two categories of day schools, the tuition and fee contribution is above 79 percent. For boarding schools, it is just below 61 percent. Other major sources of revenue are income from investments, ranging from an average of 4.2 percent of total revenue for elementary day schools to 13.5 percent in boarding-day schools, and gifts and grants, ranging from an average of 6.7 percent of total revenue for combined elementary-secondary day schools to 11.6 percent for secondary day schools

Recognizing that alternative revenue streams can moderate the pressure on tuitions and fees, many schools have developed significant income from "other programs" and "affiliated enterprises" such as summer schools, summer camps, conferences, workshops, inns, thrift shops, and day care centers. It makes good business sense to utilize plant and facilities as efficiently as possible, and the traditional structure of the school year invites creative adaptations that take advantage of "down" periods such as evenings and vacations. Average contributions from these income sources range from 2.0 percent of total operating revenue in secondary day schools to 8.1 percent in boarding schools. But eventually, limits are reached. The nature of a school's facilities may preclude the development of significant additional revenues without up-front capital investment the school cannot afford. The school's location and the local demography may work against the development of ancillary programs. It seems likely that most schools will remain significantly "tuition driven" on the revenue side.

On the expense side, it is well recognized that salaries and benefits represent the most significant single cost category for many schools. As a percentage of total expenses, salaries and benefits range from an average of about 50 percent in boarding and boarding-day schools to 68 percent in elementary day schools. Salaries associated with teaching range, on average, from a little below 50 percent of total salaries in boarding schools to 71 percent in elementary day schools. Schools are labor intensive, and most of the labor is associated with teaching.

Financial aid and tuition remission represent another significant expense category for many schools. As a percentage of total expense, financial aid and tuition remission

Table 1 School Financial Operations, 1990–91 (835 active member schools)

	Day Schools											
	Elementary		Elementary/ Secondary		Secondary		Day-Boarding		Boarding-Day		Boarding	
	$	%	$	%	$	%	$	%	$	%	$	%
Expense per Student												
Teaching Salaries	2,800	37.6	3,021	35.3	3,101	32.6	2,868	23.8	3,855	16.9	3,615	16.5
Instructional Support Salaries	197	2.6	218	2.5	259	2.7	300	2.5	591	2.6	608	2.8
Administrative Salaries	693	9.3	701	8.2	834	8.8	970	8.1	1,714	7.5	1,940	8.9
Other Salaries	559	7.5	696	8.1	783	8.2	1,292	10.7	3,175	13.9	2,843	13.0
Benefits/Payroll Taxes	825	11.1	932	10.9	1,032	10.9	1,132	9.4	2,355	10.3	1,911	8.7
Student Activities	78	1.0	82	1.0	133	1.4	140	1.2	229	1.0	210	1.0
Financial Aid/Tuition Remission	480	6.4	738	8.6	687	7.2	1,121	9.3	2,289	10.0	1,588	7.3
Other Expenses	1,825	24.5	2,174	25.4	2,671	28.1	4,212	35.0	8,638	37.8	9,179	41.9
Total Expenses	7,456	100.0	8,563	100.0	9,501	100.0	12,035	100.0	22,846	100.0	21,895	100.0
Income per Student												
Tuition and Fees	6,097	79.7	6,873	79.5	7,236	73.6	8,800	72.2	14,638	65.0	13,431	60.7
Auxiliary Services	211	2.8	402	4.6	519	5.3	556	4.6	823	3.7	1,520	6.9
Other Programs	309	4.0	206	2.4	199	2.0	450	3.7	1,115	4.9	1,730	7.8
Investments	321	4.2	430	5.0	590	6.0	1,058	8.7	3,042	13.5	2,615	11.8
Gifts/Grants	562	7.3	581	6.7	1,144	11.6	1,063	8.7	2,426	10.8	2,306	10.4
Public Aid	17	0.2	20	0.2	13	0.1	19	0.2	45	0.2	65	0.3
Affiliated Enterprises	26	0.3	23	0.3	5	0.0	42	0.3	22	0.1	59	0.3
Other Income	103	1.3	107	1.2	130	1.3	207	1.7	422	1.9	412	1.9
Total Income	7,646	100.0	8,641	100.0	9,834	100.0	12,195	100.0	22,532	100.0	22,138	100.0
Number of Schools	208		331		71		69		117		39	
Average Enrollment	280		583		360		466		256		180	

Source: NAIS STATISTICS 1992, Table 71, p. 114.

range from an average of 6.4 percent in elementary day schools to 10 percent in boarding-day schools.

Published NAIS statistics combine a number of non-salary expense categories including athletics, plant, and administration under the single heading "Other." Particularly in schools with large and complex facilities, the combined total of these expenses can amount to a substantial portion of total expense. For example, its average value for boarding schools is 42 percent. A thorough analysis of expenses should explore the factors that contribute to this combined total. The supporting data are on file in the NAIS statistical database, wherever schools have provided them in response to annual surveys, and comparative analyses can be requested through the NAIS Research and Statistics Department's Custom Report Service.

DOWNSIZING

Peter Aitken

SOME SCHOOLS HAVE CONSIDERED OR IMPLEMENTED "DOWNSIZING" INITiatives in response to declining applications and the sense of a softening market, or in attempts to position themselves strategically against such potential developments. Many factors influence the enrollment of a school at a given point in history. Capacity of the plant, strength of the applicant pool, competition from other schools, and the school's ability to work with a range of student aptitudes all contribute to determining the enrollment from year to year. The school's mission statement may even be explicit about the nature and size of the educational community it considers most desirable. Often there is a shared sense of "climate" or "atmosphere" in a school and a shared belief that this quality is closely dependent on the size of the school's enrollment. In 1927 and at the age of 24, Frank Ashburn was invited by Endicott Peabody, then Rector of Groton, to be the first headmaster of the new Brooks School. Ashburn, who headed Brooks until his retirement, at the age of 70, in 1973, was once asked what he considered to be the ideal size for Brooks School. He responded, "A little smaller than Groton."

While recognizing that a variety of factors—many of them intangible—combine to affect school enrollments, we focus here on the relationship between enrollment and net revenue per student.

Over time, enrollments fluctuate. Softening markets work to shrink school enrollments unless schools have sufficient adaptive flexibility to work with significantly changing student body profiles in response. For example, some schools have preferred to admit students representing an increased range of abilities rather than downsizing or accepting budget deficits. Others have added grade levels to sustain total enrollment. On the other hand, in periods of market stability or increasing strength, school enrollments tend to rise. The temptation to over-enroll is seductive, because the marginal revenue is often critical to a balanced budget.

Now, despite the heavy dependence of most schools on tuition and fee income for revenues and the dominance of salaries and benefits in their expense budgets, there is an almost dysfunctional link between the application/admission/enrollment schedule and the budget schedule. In order to make commitments to the faculty and to publish tuitions for the coming school year, most schools adopt preliminary budgets during the preceding winter or early spring. But the admission process being what it is, many schools don't know what their actual enrollments will be until late in the summer or even right up to opening day in September! The result is that many schools embark on the new school year with enrollments that are different from the numbers they used in developing preliminary budgets. Adjustment processes are inevitably somewhat haphazard: they include last-minute scrambles to admit additional students and disruptive, eleventh-hour budget revisions.

Let's hypothesize that there is such a thing as a "right size" for a school from the financial standpoint. This "right size" is most financially efficient. It supports the school's existing program at a lower cost per student than can be achieved with an enrollment either somewhat smaller or somewhat larger. To balance the budget with 10 fewer students or with 10 more requires higher tuitions. A further hypothesis is that this "right size" is a little bigger than the "ideal size," a target the school uses in program planning and budgeting.

We can examine our hypotheses by considering a school that is operating at its "ideal size." Schools being as labor intensive as they are, the main fluctuation in expenses that accompanies changes in enrollment is the cost of salaries and benefits. But the dysfunctional relationship between budget, faculty contract, tuition-setting, and admission schedules complicates the working of this relationship. Because our hypothetical school used the concept of "ideal size" as the target enrollment that drove the planning and budget processes, the budget is balanced. Enrollment below the "ideal size" can eventually be accompanied by a reduction in the size of the faculty, but faculties are people. Often, you can't reduce the size of a faculty by a half or a quarter of a person to match a decline in enrollment, and the independent school culture, admirably humane, is reluctant to cut hours or people. Until a reduction can be made in the size of the faculty, declining enrollment results in the operating costs of the school being spread across too few students, so either the tuition goes up or the school runs at a loss. Rising enrollment, on the other hand, eventually dictates the need for additional faculty, but a degree of over-enrollment in classrooms may be tolerated until the point is reached when sections must be split and an additional teacher hired. Thus, initially, rising enrollment may result in an operating surplus. Therefore, viewed strictly from a financial operations perspective, the budget, faculty contract, tuition-setting, and admission cycles combine with some tolerance for overenrolled sections to define a "right size" that is a little higher than the "ideal size."

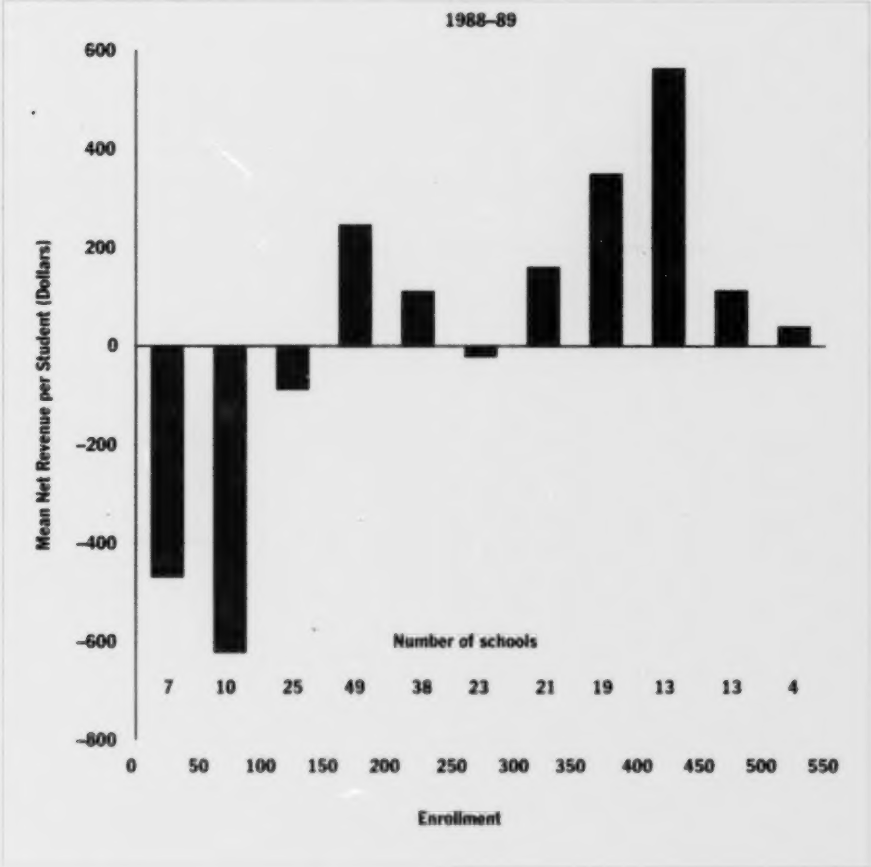
Financial operations data for the 1989–90 school year were analyzed to see if there is evidence of a "right size" effect. Figures 5–8 show net revenue per student in relation to school size (enrollment) for several different categories of schools. Numbers of schools in each enrollment bracket are indicated. The figures suggest that there are identifiable minimum sizes below which schools become financially inefficient. They also show that, above these minimums, there are positive and negative zones with regard to optimum enrollment from the financial operations perspective. While this study covers only one year, the number of schools it includes is sufficient to support some cautious generalizations. Policy-makers and planners considering downsizing would do well to understand the implications of these charts and to explore the degree to which they are likely to be applicable in the context of individual schools.

THE OUTLIER STUDY

Peter Aitken

NAIS STATISTICS HAVE TRADITIONALLY PRESENTED RANGES, MEANS, AND medians for many operational numbers, such as salaries and tuitions, broken down by school type, school size, enrollment type, and geographic re-

Figure 5 Mean Net Revenues per Student by Enrollment Ranges (Elementary Schools)

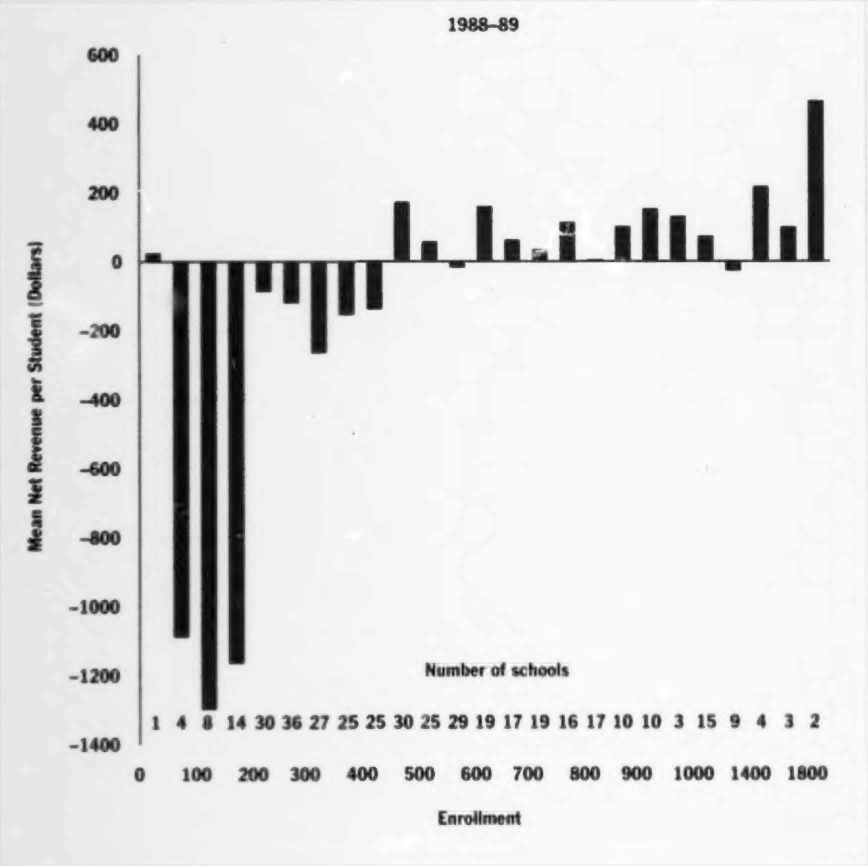


Source: NAIS statistics.

gion. This basic descriptive approach may have reinforced a tendency for policy developers, planners, and decision-makers to focus on measures of central tendency (i.e., means and medians) in assessing patterns and performance in their own schools. While there is nothing wrong with such an approach, our present effort to explore possibilities for significant change is likely to be informed more by awareness of *unusual* operating characteristics of schools than by familiarity with means and medians. For example, schools charging unusually low tuitions or reporting unusually high student-teacher ratios may be interesting in the context of our present study. The approach taken in this section is what we have called an "outlier study." "Outliers," a statistical term, refers to schools reporting unusually high or unusually low operating characteristics. We specifically explored the following characteristics:

- Administrative expense as a proportion of total expense;
- Instructional expense as a proportion of total expense;

Figure 6 Mean Net Revenues per Student by Enrollment Ranges (Elementary/Secondary Schools)



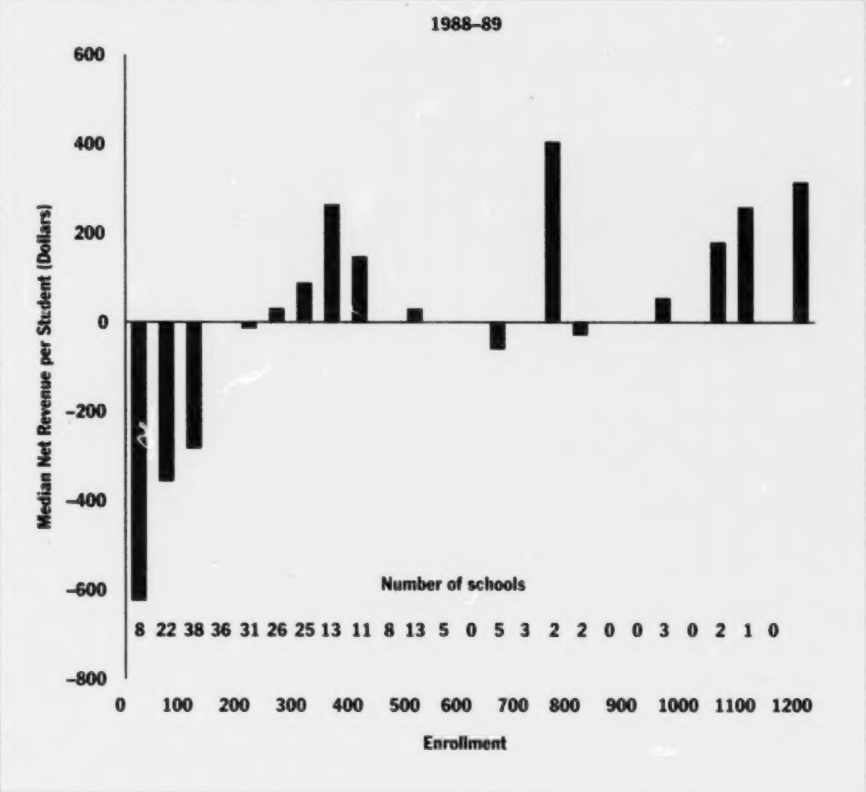
Source: NAIS statistics.

- Student-teacher ratio;
- Average class size;
- Teacher load (the average total number of students assigned to a teacher);
- Net revenue per student.

Other ratios or indices would also be interesting and useful in developing a comparative understanding of a school's resource allocation and cost structure. Our discussion focuses on the foregoing issues because NAIS data are available for them.

Figures 9–14 show the values of the above ratios and indicators for six different school categories. The data are for the 1990–91 school year, except in the case of average class size, where 1992–93 figures are used. The horizontal bars indicate the range of values for outlier schools, 10 schools with unusually low values and 10 schools with unusually high values. Short, vertical bars indicate median values. Values

Figure 7 Median Net Revenues per Student by Enrollment Ranges (Secondary Schools)



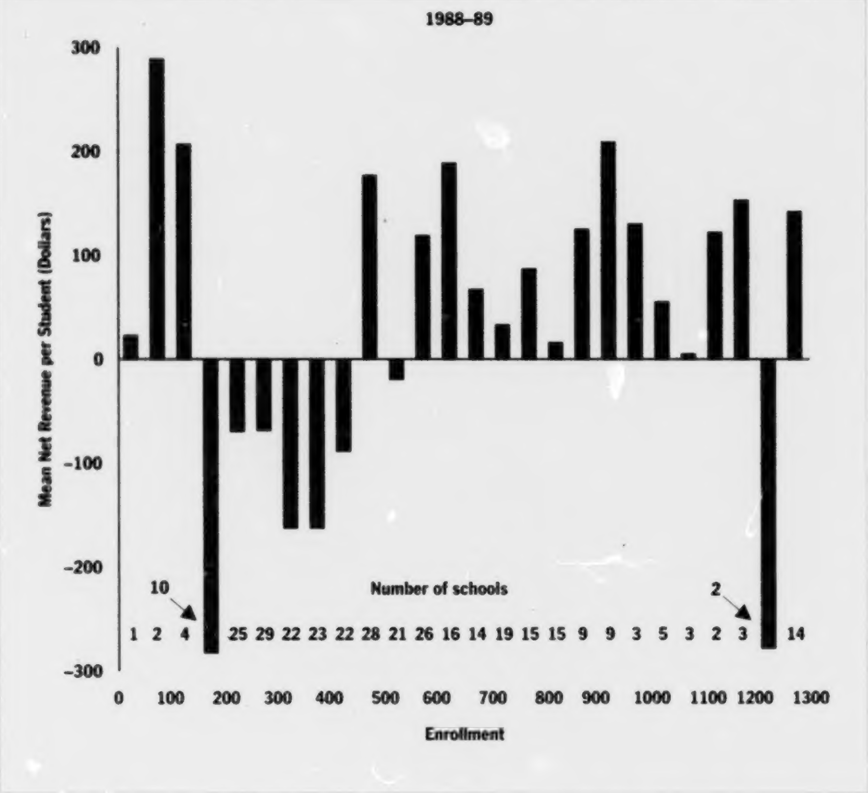
Source: NAIS statistics.

that seemed anomalous and probably erroneous were eliminated before constructing these charts, so the outliers shown here represent plausible values.

Use your own values to determine your school's location on any of these comparison scales. Position relative to medians and outliers is neither a "good" nor a "bad" sign. Rather, it provides a point of departure for policy discussions by indicating the range of practice among similar independent schools. Many variables, some local and idiosyncratic and others more general, must be taken into consideration before you can decide what is appropriate in your school's particular context.

Median administrative expense ratios (ratio of expenses for administrative, secretarial, and clerical salaries plus other administrative expenses to total operating expense, using the categories in the NAIS Financial Operations survey form) are 15 percent for all categories of schools except elementary-secondary schools. The elementary-secondary day schools category includes most of the largest schools, and economies of scale may contribute to the lower median administrative expense ratio of 12 percent for this category. Outlier values of the administrative expense ratio are

Figure 8 Mean Net Revenues per Student by Enrollment Ranges (Elementary/Secondary Day Schools)



Source: NAIS statistics.

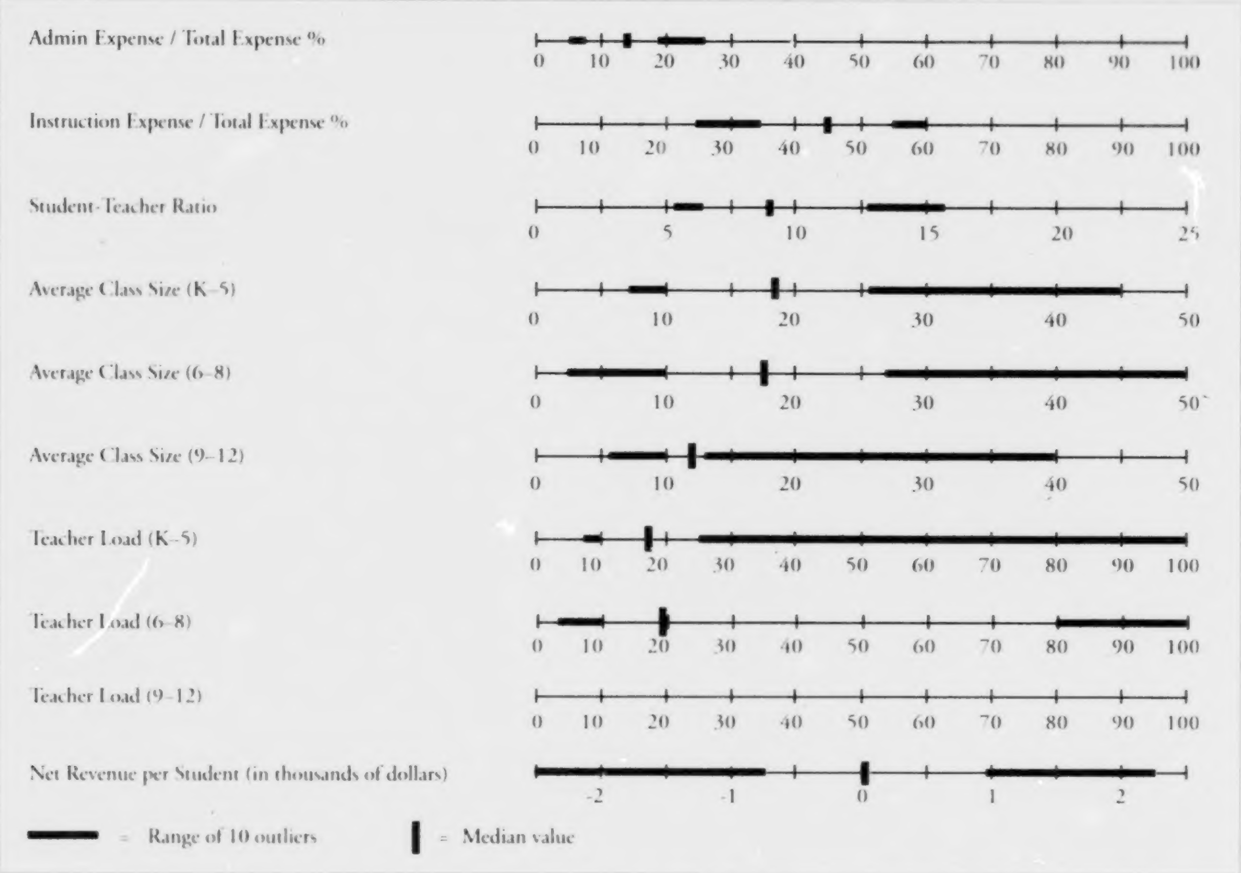
typically 20 to 25 percent on the high side and 5 to 10 percent on the low side, with the lowest values again associated with elementary-secondary day schools.

The median instruction expense ratio (ratio of expenses for teaching and instructional support salaries plus other instructional expenses to total operating expense, using the categories in the NAIS Financial Operations survey form) is characteristically 40 to 50 percent for day schools and 20 to 30 percent for schools with boarding students. Outlier values suggest that instruction expense ratios as high as 55 to 65 percent for day schools, 40 to 50 percent for day-boarding schools, and 30 to 40 percent for boarding and boarding-day schools may be worth considering.

Median student-teacher ratios are approximately 9:1 in day and day-boarding schools, with outliers between 12:1 and 15:1 on the high side and 5:1 or even lower on the low side. In boarding and boarding-day schools, the median is 6:1, with outliers at 3:1 and 10:1.

NAIS' fall 1992 survey sought data on average class size for the first time. The survey instructions defined average class size as "the average number of students for reg-

Figure 9 Selected Operational Ratios and Indicators for Elementary Day School "Outliers," 1990–91 and 1992–93

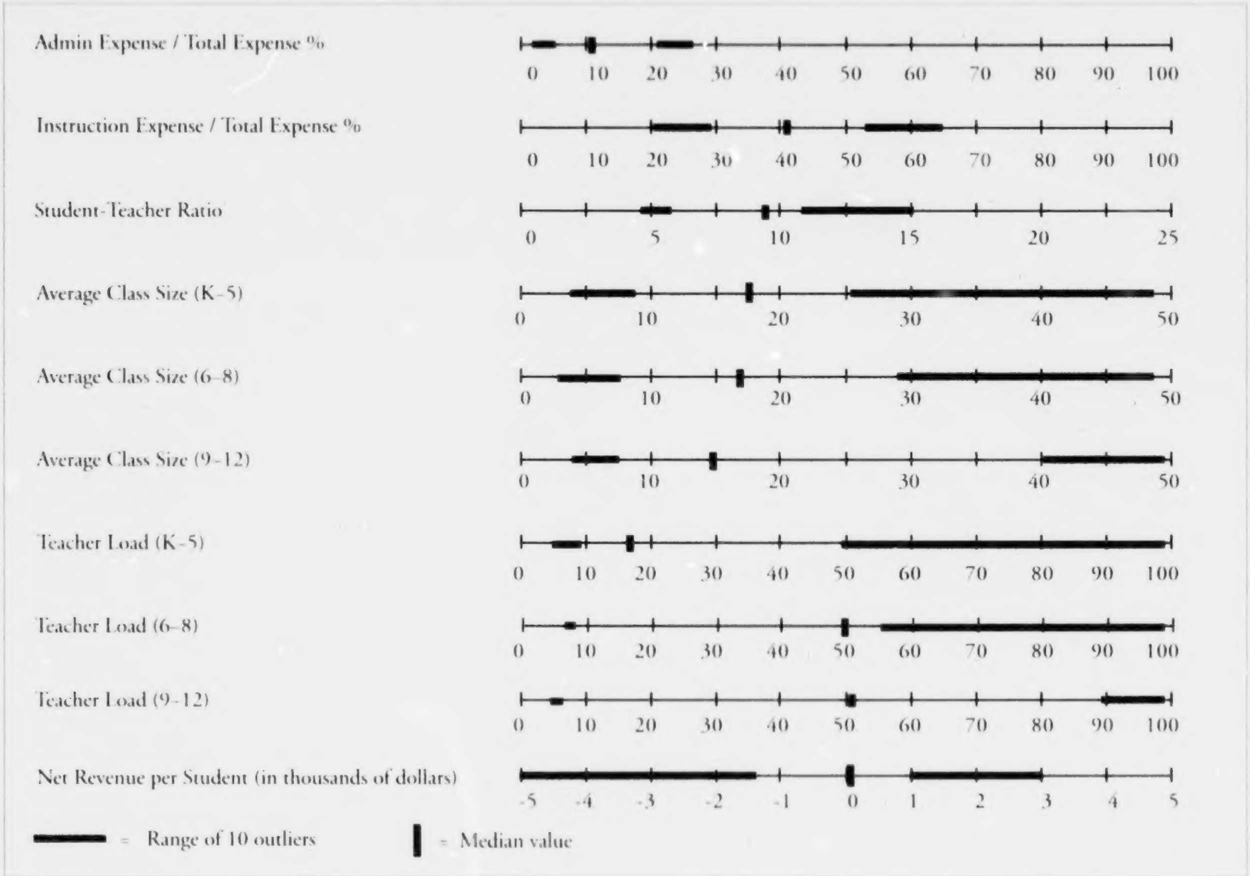


Source: NAIS statistics.

ular classes or sections in each of the four grade ranges shown." The grade ranges were Preschool, K–5, 6–8, and 9–12. A general rule of thumb appears to be that median class size is about double the student-teacher ratio in the elementary grades and somewhat less in the middle and upper grades. Among day and day-boarding schools, outlier class size values range from 30 to 50 students on the high side, though exceptions are secondary day schools, where no average is larger than 27, and 9th–12th grade classes in day-boarding schools, where the upper limit on average size is 32. In virtually all categories of schools, low-side outliers are between 5 and 10. Remember that these figures represent schools reporting the *average* size of classes, not the sizes of their smallest classes. The issue of class size is addressed more fully in chapter VI.

Median teacher loads in day schools are about 20 students in the elementary grades and 50 to 60 in the middle and upper grades, with outlier values sometimes as high as 100. (In this connection, it is interesting to note that teachers in Canadian independent day schools often carry loads of 5 sections and 80 to 100 students. See the section on Canadian schools in Chapter VI.) In boarding and boarding-day schools,

Figure 10 Selected Operational Ratios and Indicators for Elementary-Secondary Day School "Outliers," 1990–91 and 1992–93



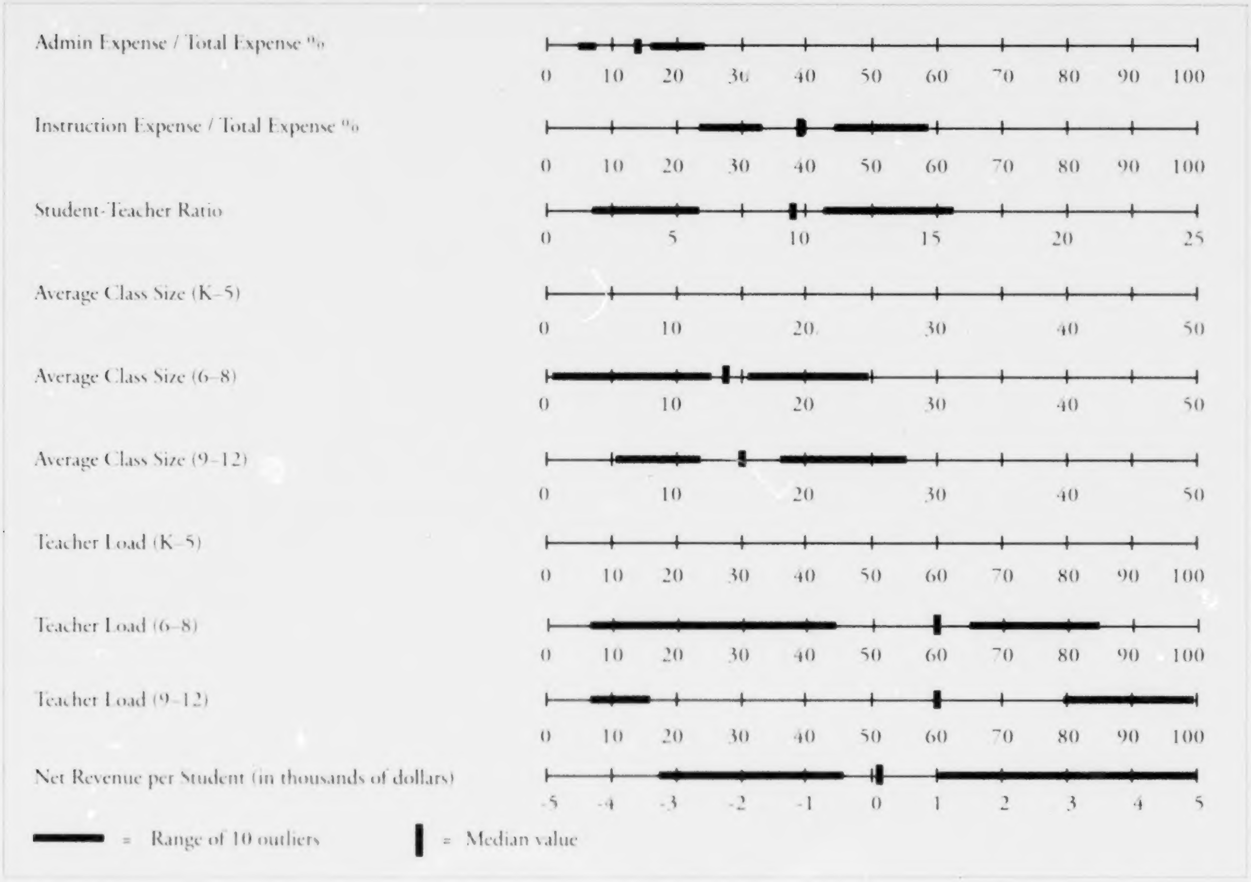
Source: NAIS statistics.

median teacher loads in the secondary grades are 40 students, with outliers between 50 and 100 students.

The data on net revenue per student are largely remarkable for the range of values revealed. Outlier day schools report net losses of $500 to $5,000 per student and net surpluses from $1,000 to $5,000. Among schools with boarding students, outlier values for losses lie between $500 and $10,000 per student and for surpluses between $500 and $4,000 per student. Reassuringly, median values in all categories lie very close to zero. The discussion of long-term financial equilibrium in chapter IV will place the issue of balanced budgets in the larger context of multi-year planning that includes consideration of endowment, plant, and debt.

We conclude this section by repeating that neither medians nor outliers imply value judgments. Medians highlight common practice, outliers indicate extremes. In the search for strategies to reduce per-student costs, awareness of the range of practice among independent schools may encourage planners to explore hypotheses that diverge more significantly from the status quo than those they might otherwise have considered.

Figure 11 Selected Operational Ratios and Indicators for Secondary Day School "Outliers," 1990–91 and 1992–93



Source: NAIS statistics.

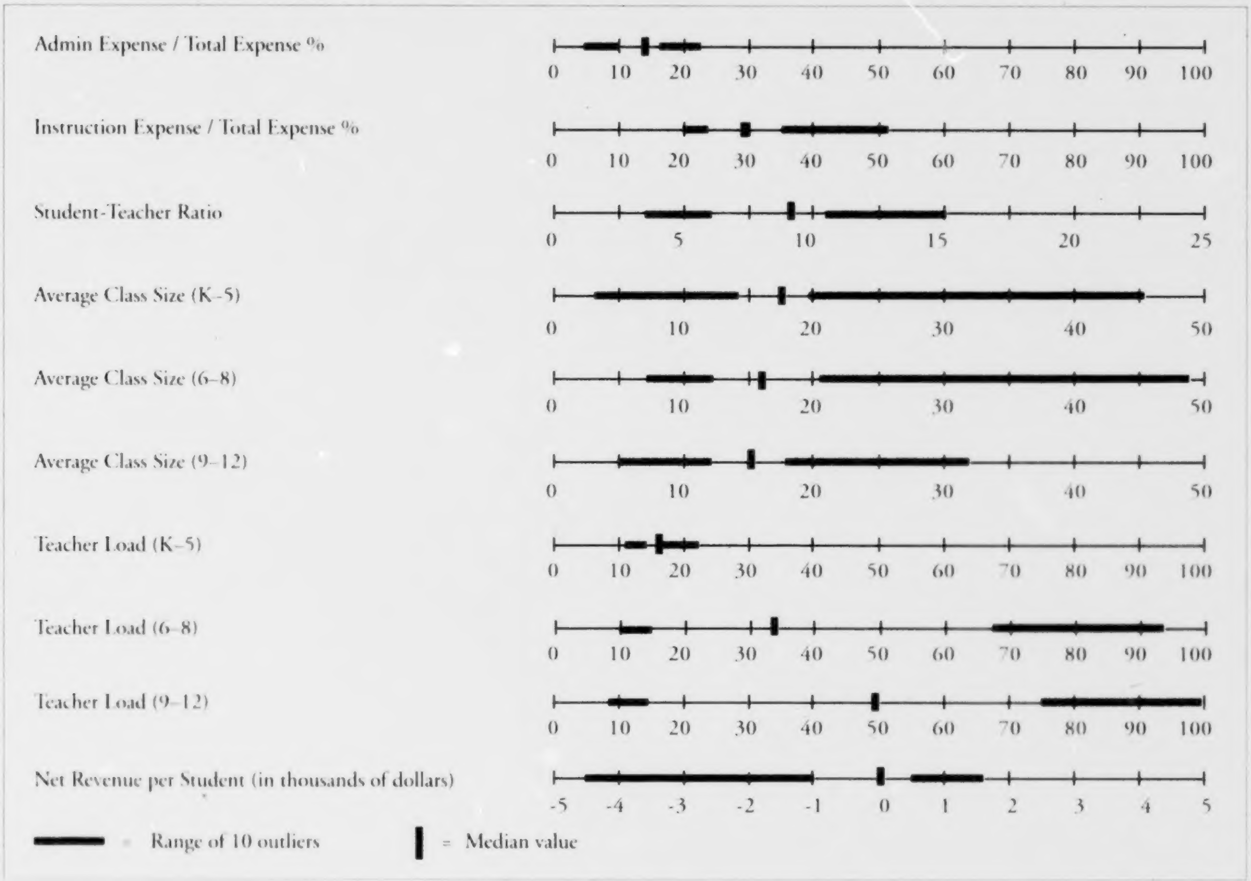
THE IMPACT OF TAX POLICY ON FINANCIAL ASSISTANCE PROGRAMS

Thomas Vitullo-Martin
Peter Aitken

SIGNIFICANT FORCES LARGELY OUTSIDE THE CONTROL OF INDEPENDENT schools interact to affect financial aid programs. In this section we take a closer look at the impact of these forces and speculate on alternative approaches to supporting financial aid programs for low-income and moderate-income families.

Tuitions create the filter that in large part determines the economic strata from which NAIS students are drawn. According to the U.S. Department of Education's National Education Longitudinal Study of 1988, known as NELS:88, about 15 percent of the NAIS population, or 50,000 to 55,000 families, have family incomes below $42,000.

Figure 12 Selected Operational Ratios and Indicators for Day-Boarding School "Outliers," 1990–91 and 1992–93

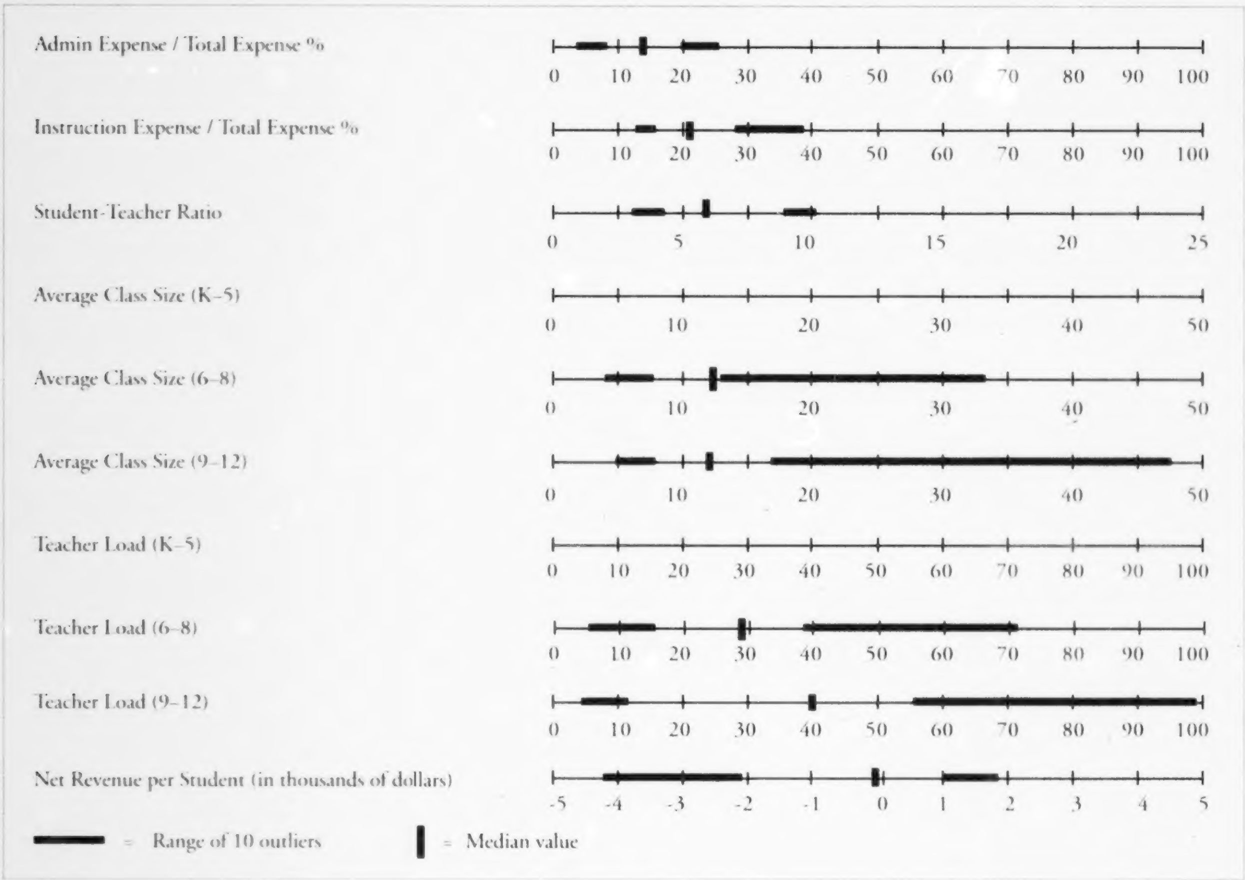


Source: NAIS statistics.

How many of these families—whose incomes are approximately median or below for the nation—attend NAIS schools without financial aid? School and Student Services for Financial Aid (SSS), which processes applications for financial aid, reports (Berenson, 1992) that 35,468 families, or slightly more than half of the families applying for financial aid through its service, had total incomes below $42,000 in 1990–91. It recommended full financial aid to 56 percent of these families; it recommended that families contribute less than $2,500 toward tuition in over 80 percent of the cases of families in this income range.

Not all these families have children in NAIS schools. SSS provided processing services to more than 70,000 families in conjunction with 1,600 schools—about twice the number of schools that are members of NAIS. So we cannot assume that the more than 35,000 families in this income category are all at NAIS schools, though no doubt the majority are.

Figure 13 Selected Operational Ratios and Indicators for Boarding-Day School "Outliers," 1990–91 and 1992–93



Source: NAIS statistics.

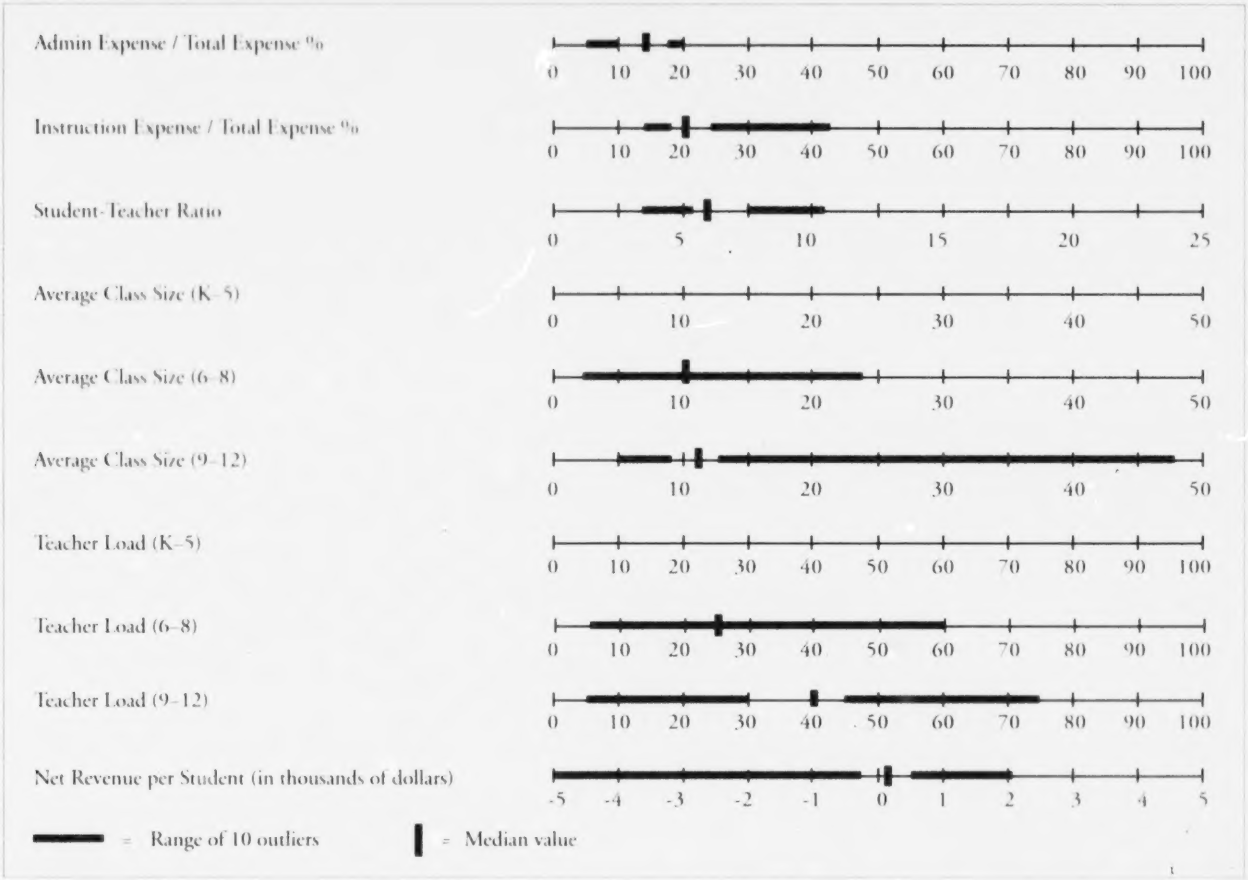
In addition, most NAIS schools provide tuition remission to the children of faculty and staff without requiring application to SSS. These families, with incomes typically below the $42,000 median, are not included in the SSS statistics. They do make up a portion of the families in the federal estimates, however.

Given the evidence that we have, we can conservatively conclude that the majority of NAIS school families with incomes below $42,000 receive financial assistance. It is possible that almost all such families receive some form of tuition adjustment.

As tuitions increase, so do the incomes of families seeking financial assistance. SSS reports (op. cit.) that 6,468, or 10 percent of its applicants, had total incomes of $75,000 or more. It recommended family contributions to educational expenses exceeding $15,000 in 85 percent of these cases and $13,000 in 94 percent of these cases.

About 35 percent of the families requesting financial aid (using SSS services) fall in the $40,000 to $75,000 income range. While the SSS formulae are not simple, as a general rule the family contribution appears to approximate half the difference be-

Figure 14 Selected Operational Ratios and Indicators for Boarding School "Outliers," 1990–91 and 1992–93



Source: NAIS statistics.

tween the total family income and $40,000. Thus the typical contribution for a family with income of $60,000 would be about $10,000.

The actual threshold for using NAIS schools is obviously a function of the median family income in a region, the tuition of the school, and the circumstances of the family. But speaking generally, there is an expectation that families with income of $40,000 can pay relatively small tuitions; with $60,000, in the range of $10,000; and with $75,000, in the range of $15,000.

Between 1990–91 and 1991–92, schools on which the SSS report is based experienced a decrease in financial aid applications from families in the $30,000 to $50,000 income range and an increase in applications from families in the over $75,000 income category. The shift cannot be explained by a sudden increase in the number of high-cost schools included in the SSS analysis. The number of schools involved increased by only 6 percent, or about 100, but the number of families applying increased by 13 percent, or approximately 8,385. The numbers of families with incomes above $75,000 who sought assistance increased by 37 percent, or about 2,404. The numbers of families with incomes over $60,000 who were assisted increased by 28 percent. In sum, it appears that families with higher incomes were appearing in the category of families needing assistance.

One source of the problem is within the control of our schools—up to a point. For the past decade, tuitions have increased at a faster rate than inflation, principally so that schools could increase staff salaries to a level that averages about 70 percent of public school salaries. Most recently, other expense items, such as health care costs and deferred maintenance, have pressed on budgets and forced increases in tuition. To hold tuition increases down, schools have taken steps to reduce operating costs.

But in large part it may be that the forces that have shaped the client base of the NAIS schools for a considerable time have been outside forces. NAIS schools both expanded dramatically and began to enroll higher percentages of middle-income and minority students during the tremendous economic boom from the 1950s through the early 1980s, which saw a great rise in average family income and a kind of democratization of wealth. But the past several years have seen at the least a contraction, with a slight reduction of the wealth of middle-income families and an increasing concentration of resources in families with substantial wealth. NAIS schools are particularly sensitive to these changes, since their tuitions represent a large-expenditure item for families approaching high-income status. It is not our point here to prove this thesis: there is abundant statistical evidence for it. But it helps illustrate the fact that a significant problem the schools face is created by forces outside their control, in the movement of the economy itself.

There is nothing the average school can do that will affect the economic circumstances of the families that it serves. When broad categories of families experience such economic setbacks, the schools find their financial aid programs overwhelmed. And they are in a double bind on the issue of increasing aid, since their financial aid—as a component of their expense budget—impinges on their tuition charges, most financial aid being taken from current income. The increase in tuition is necessary to increase aid, but increases in tuition also increase the number of families requiring aid.

NAIS schools are operating in an education marketplace, and they can respond to, but not control, the movements that affect that marketplace. However, particularly in education, that marketplace is not totally unmanaged. It is strongly shaped by public policy, particularly taxation policy and, to a lesser extent, by the manner in which the states provide free education. At the very least, schools should be aware of the effects of federal and state policies on their revenue and financial aid programs. In fact, it is useful for NAIS members to observe the way in which public policy has intervened in the entire market in which they are operating.

Federal and state income tax codes and regulations treat tuitions (unless directly related to current business) as a personal expense, not an expense deductible from personal income. At the same time, federal and state tax codes permit the deduction of local property taxes and, generally, the interest cost of the purchase of a home. This has implications for the education market.

In the wealthiest areas of the U.S., property taxes are, in essence, school tuitions. All American population centers are characterized by a stratification of neighborhoods by wealth, with the exception of portions of some central cities. In most population centers, wealth concentrates in school districts. The stratification is so strong that a recent Department of Education Chapter I survey found that the wealthiest quarter of school districts, enrolling a total of 12 million students, enrolled only 300,000 low-income students. The wealthiest areas have, on average, the wealthiest tax bases, including high-tech industries. In these areas, the highest proportion of local taxes—averaging over 80 percent of revenues—goes to the support of the schools. The districts do not provide, and perhaps do not need, the other city services required in areas housing a broader spectrum of Americans. The property taxes thus become the equivalent of school tuitions. The housing prices reflect, to a degree, the quality of the local school, and a portion of the housing price represents a capitalization of the demand for the school—something like the membership fee for a private club. Thus a portion of the interest on the house, and of the tax deduction for the interest, is related to the quality and use of the local public schools.

The amounts of subsidy through the tax system for the "tuitions" to these high-income public systems are very large. In the wealthiest areas of New York or San Francisco, there are districts spending in excess of $25,000 per pupil. On New York's Long Island, 152 school districts spend more than $12,000 per pupil. However these expenditures are divided among the property owners, they are almost entirely deducted from taxable income by local residents and business. Only those filing standard returns do not take the deductions, and in high-income areas few file such returns. The tax savings are at the rate of the last dollar taxed; let us assume conservatively that these savings amount to 33 percent, combining federal, state, and local income taxes. The value of the $12,000 per-pupil deduction is about $4,000 on the combined tax returns. Thus the federal and state tax systems, outside the education program budgets, are providing about $4,000 per pupil to the schools in those districts. To raise $12,000, locals need only pay about $8,000. The wealthier the district, the greater the savings: the $25,000 per pupil district generates about $8,300 in tax savings; the net cost to the people in the district is $16,700. Of course the high spending increases property values, which provides still another area of tax savings.

For the most part, none of these kinds of calculations work in central cities, where few families take deductions. In fact, as a result of net government intervention, central city schools receive far less subsidy than do the wealthiest public schools in their areas.

Similarly, these sorts of savings are not available to families using private schools. The tax code considers tuition to be a personal expense, not deductible like the property tax, even when the property tax is tantamount to a school tuition.

Table 2 sets out the consequences of the tax treatment of tuition expenses for parents using NAIS schools. If the families supporting the NAIS schools were treated in the same fashion as those choosing to attend the "free" competitive public schools—that is, if their tuitions were deductible from taxable income—their net costs would

Table 2 Consequences of the Tax Treatment of Tuitions for NAIS Parents and Savings to Local School Districts

School Type[†]	Enrollment ($ millions)	Total Cost ($ millions)	Tuition ($ millions)	Pre-tax Income ($ millions)	Taxes at 33% ($ millions)	Savings to Local School District ($ millions)
Elementary Day	58,240	434	355	533	178	582
El-Secondary Day	192,973	1,652	1,326	1,989	663	1,930
Secondary Day	25,560	243	185	278	93	256
Day-Boarding	32,154	387	283	425	142	322
Boarding-Day	29,952	684	438	657	219	300
Boarding	7,020	154	94	141	47	70
Totals	345,899	3,554	2,681	4,023	1,342	3,460
Adj Total[††]	373,571	3,839	2,895	4,345	1,449	3,737

[†] Definitions of school types are given in *NAIS Statistics 1992*, p. 7.

[††] Adjusted by 1.08 to correct for underreporting.

Source: NAIS STATISTICS 1992, Table 71.

be reduced by about $1.5 billion. NAIS schools could increase their tuitions by one-third without any adverse economic effect on the families. It is likely the new money would be used in the same way as previous increases, first to increase faculty salaries and second to provide additional financial aid.

The savings to local districts in the last column are in all likelihood significantly understated. The calculation is based on the assumption of a $10,000 per-pupil expenditure in the home school district. More likely, expenditures would average $12,000 to $15,000, particularly for high school districts. Thus the range of local education dollars saved is between $3.7 and $5.6 billion.

Table 3 presents the total levels of subsidies and of financial aid provided by the same schools. These figures are obviously gross estimates, interpretations of broad categories of income and expense provided by the schools, but are within a reasonable range for the purposes of considering the effects of current policy.

NAIS schools are providing subsidies totaling about $900 million, including the cost of about $300 million in financial aid. For purposes of illustration, let us consider the theoretical possibility that NAIS schools would provide no financial aid, but use the entire amount of the current financial aid as a subsidy to tuitions. (As a practical matter, this is probably impossible, or if possible, would have damaging effects on the schools and their finances because of reduced enrollments, a factor not taken into account in this illustration.) In that case, tuitions could be reduced by about 10 percent, saving the average family about $1,300 in gross income, $1,000 in tuition payments. While it may not be practical nor desirable for the schools to eliminate financial aid, the idea does illustrate the fact that at least a significant portion of financial aid is now covered by tuitions. The effect of current taxation policy is to reduce

Table 3 Tuition, Subsidy, and the Tax Cost of Financial Aid in NAIS Schools

School Type†	Total Cost ($ millions)	Subsidy ($ millions)	Financial Aid ($ millions)	Tax Cost of Aid ($ millions)
Elementary Day	434	79	28	14
El-Secondary Day	1,652	326	142	71
Secondary Day	243	58	18	9
Day-Boarding	387	104	36	18
Boarding-Day	684	246	69	34
Boarding	154	60	11	6
Totals	3,554	873	304	152
Adjusted Total††	3,839	943	328	164

†Definitions of school types are given in *NAIS Statistics 1992*, p. 7.
††Adjusted by 1.08 to correct for underreporting.

Source: NAIS STATISTICS 1992, *Table 71.*

the amount of aid available by about one-third. Put another way, it costs NAIS parents almost $500 million in gross income to provide $327 million in financial aid.

It is important for NAIS schools to recognize that federal and state policies work against our efforts to enroll a broader economic spectrum of students. At the very least, a portion of tuition payments equal to the proportion of operating expense represented by financial aid should be deductible as a charitable contribution. The effect of current policy is to restrict the amount of such aid.

We can speculate about how the funding of financial aid programs might be restructured so as to remove or reduce the substantial tax burden encountered under current arrangements. Consider the example of a school with a $5 million expense budget, of which $350,000, or 7 percent, is devoted to financial assistance. Enrollment is 580 students. Further, suppose that need-based financial aid accounts for $280,000 and that $30,000 of this amount comes from restricted endowment income. Thus, $250,000 in need-based financial aid is paid for out of current revenues. Assuming that the school is 75 percent tuition driven, this means that $187,500 in tuition revenue is allocated to need-based financial aid. If parents, most of whom are presumably in the 33 percent tax bracket, had been able to give this amount to the school to support the financial aid program instead of paying it in the form of tuitions, then approximately $100,000 of federal tax payments, under the present arrangement, could have been redirected either as a net reduction in parents' costs, or as an increase in the school's financial aid resources, or as a combination of both.

To be deductible from income for tax purposes, of course, a contribution must be voluntary. To what extent could the school continue to count on the $187,500 of revenue it is allocating to its financial aid program if this contribution were to be made voluntary instead of being included in the published tuition figure? Could the school continue to make budgetary commitments from year to year in light of the uncertainty that would now be introduced about this revenue component? There are, of course, parallels in the areas of annual and capital giving programs. Many schools include projected revenues from an annual giving campaign in their annual budgets. And, similarly, many schools include projected revenues from capital appeals in their long-term capital budgeting. How might the school test the waters by redefining a portion of tuition as a voluntary contribution supporting the financial aid program?

This is potentially a win-win situation. If the benefits of redirecting the present tax payment are shared between full-tuition-paying parents, through the reduction of their net costs, and low-income and moderate-income families, through the increased availability of financial aid funds, then everyone stands to gain. Everyone has an incentive for making it work. Education of current and future parents would, of course, be the key. One approach might be for the school to attract a foundation grant to offset potential revenue shortfall during a five-year test of a new tuition-plus-contribution strategy.

ANALYZING PRIVATE SCHOOL EXPENDITURES: A RESOURCE ALLOCATION MODEL APPLIED TO INDEPENDENT SCHOOLS

Bruce Cooper

The Study

THE GOAL OF THE RESEARCH WE DESCRIBE HERE IS TO ANALYZE EXPENSES in two NAIS member independent schools and compare patterns of financial resource allocation with those in a parochial school and in eight public school districts. The method used to analyze resource allocation was developed in the context of a major national study of public schools' allocation systems (Cooper and Sarrel, 1991; Wechsler, 1990; U.S. Chamber of Commerce, 1993). The public school information offers a provocative comparison for independent schools as they reflect on their allocation of resources and search for ways to contain or reduce costs.

Our study for the Project on Pricing and Affordability involves an analysis of expense patterns in three private schools in the United States: two non-sectarian NAIS member independent schools and one Roman Catholic private school operated by a holy order, not by a diocese. Using a newly developed method for distinguishing where costs are incurred and for what purpose, called the School Site Allocations Model (SSAM), this research applies a well-defined set of categories for tracking funds from their sources to the classroom. Since similar research was done in eight public school districts, we are able to compare patterns of fund use in the two NAIS schools and one parochial school with those in over 420 public schools. The purposes of the study are the following:

- To assist schools in understanding fund flow and fund utilization through an improved allocations model;

- To analyze school expenditures, whether for institutional administration or for direct educational functions;
- To determine the use of funds by function, whether for administration, school operations and facilities, staff and teacher development, pupil support, or direct classroom instruction;
- To analyze these data by location and by function, on a school-by-school basis, to determine the cost ratio of support and administration to actual classroom instruction;
- To assist schools in reallocating resources, enhancing instruction and pupil support, and improving financial operations.

The Model

THE SCHOOL SITE ALLOCATIONS MODEL was developed over a four-year period to track funds from the school board to the classroom, a process that assisted public school districts in improving the use of their funds. Use of the model involves sorting costs by location and by function.

Sorting costs by location. In public school systems, it is easy to differentiate between costs incurred at the "central office" (or, as we called them in private and independent schools, "institutional" costs) and those incurred at the "school site." This process of separating expenses has become critical in understanding how money is spent, as public schools are under pressure to comply with Chapter I and a variety of other legislative mandates covering, for example, bilingual education, provision for the handicapped, school desegregation, and the equalization of spending per pupil between rich and poor districts. The passage of Chapter I (called Title I in 1965) has led to an increase in paperwork, accountability, supervision, and administrative costs—leading some critics to argue that the growth of central office expenses has drained resources from schools and classrooms.

In contrast, private schools usually have no separate central office, but the activities of setting goals and mission, hiring staff, paying bills, signing contracts, recruitment, complying with and reporting on federal and state regulations, and so forth, are still required. In addition, as private institutions, independent schools must raise their own resources through efforts such as a development office or office for alumni/ae affairs. The costs of raising money, not incurred by the tax-supported public schools, place extra burdens on private schools as part of their "institutional" activities. Hence, although private schools rarely have separate "central" and "school-site" offices, there is nevertheless a distinction between direct educational activities, on the one hand, and institutional support activities, on the other.

Sorting costs by function. The second step, once expenditures have been analyzed by location, is to determine what functions these dollars are fulfilling. The model categorizes the use of resources by function at both "institutional" and "school-site" levels, using upper case letters "A" through "E" for "institutional" and lower case letters "a" through "e" for "school-site."

I. Administration

LEVEL A: *Institutional* Administration: Costs associated with managing the school, including a portion of the head's (principal's) salary and fringe benefits, business office, fund-raising, contracts, accounting, personnel. These are the support or institutional development functions for the school organization and do not go directly to the school's educational program.

Level a: *School-Site* Administration: Costs associated with running the school itself—hiring, supervising, and evaluating teachers, overseeing pupil activities, observing classes, dealing with parents directly. (This function in public schools is assumed by the principal, while LEVEL A, Central Administration, is often the role of superintendent and top staff.)

II. Buildings, facilities, and transportation

LEVEL B: *Institutional* Facilities/Operations: Costs associated with the physical support of LEVEL A above—lights, heat, cleaning, maintenance, water, insurance for that part of the school facilities associated with the institutional function. Hence, the offices of the alumni/ae director, accounting, fund-raising, admissions and recruitment, legal and contracts, labor relations, etc., are charged off to LEVEL B.

Level b: *School-Site* Facilities/Operations: Costs related to the operation, cleaning, and maintenance of the school buildings (classrooms, corridors, gymnasium). This side of the cost structure might include busing and other transportation, trucks, heating and lighting the buildings, maintaining the playing fields, pool, cafeteria—anywhere the students actually work and play.

III. Staff development and support

LEVEL C: *Institutional* Staff Support: Costs related to supporting the staff administratively. These expenses usually involve coordinating teacher in-service education, coaching and mentoring program costs for teachers, additional training, sabbatical leaves.

Level c: *School-Site* Staff Support: Costs associated with delivering actual training and support to teachers.

IV. Pupil support

LEVEL D: *Institutional* Pupil Support: Costs related to helping students outside the classroom. These include coordinating the extra-curriculum, managing testing programs, psychological services, the college admissions function, etc.

Level d: *School-Site* Pupil Support: Costs associated with direct delivery of non-classroom services to students, including coaching, club activities, guidance counseling, library help, media, trips, and other such work outside the class—all costs that support the non-classroom life of schools and students.

V. Instruction

LEVEL E: *Institutional* Instructional Support: Costs attributable to supporting instruction while not actually giving it. Hence, if someone writes tests for students, orders and distributes textbooks, workbooks, and art supplies, but does not interact directly with students in the classroom, the costs are attributable to LEVEL E, Institutional Instructional Support.

Level e: *School-Site* Instructional Support: Costs directly related to the teaching-learning process in schools, usually but not always taking place in the classroom. Here are accumulated teachers' salaries and fringe benefits, costs of teacher aides, textbooks, maps, materials, workbooks, and other expenses directly related to teaching and learning primarily in the classroom setting.

These ten functions, LEVELS A, B, C, D, E and levels a b, c, d, and e, account for all the costs in the School Site Allocations Model, or SSAM.

Describing the Sample

THREE PRIVATE SCHOOLS and eight public school systems are included in the sample (see Table 4). The private schools are the Johnsen School (all names are fictitious), a K–12 urban independent coeducational day school; Hillcrest Preparatory School, a suburban independent coeducational day school; and St. Grace School, a 9–12 all-boys' Catholic school run by an order of religious brothers.

Table 4 Private and Public School Descriptive Data: Enrollments, Total Expenditures, Per-Pupil Expenditures, and Number of Schools, 1990–91

Schools/Districts	Enrollment 1990–91	Total Expense ($ in millions)	Per-Pupil Costs ($)	Number of Schools
Private Schools				
Johnsen School†	461	4.60	9,988	1
Hillcrest School†	653	7.14	10,932	1
St. Grace School	630	2.44	3,869	1
Public School Districts				
District A	6,473	19.58	3,024	11
District B	7,683	62.22	8,098	14
District C	8,925	43.85	4,913	15
District D	9,001	45.48	5,053	13
District E	12,261	45.65	3,723	21
District F	67,140	257.72	3,839	121
District G	75,640	340.88	4,507	109
District H	75,789	308.72	4,073	118
Total	264,656	1,138.27	4,301††	425

† NAIS member schools.

†† Average (i.e., $1.138 billion total expense divided by 264,656 total enrollment). The unit of analysis here is all students together, not the eight school districts separately.

These three schools are compared in this analysis, using the School Site Allocations Model, with some 422 public schools located in eight diverse public school districts across the nation. To maintain confidentiality, these eight systems are given letter names, from District A through District H. The two NAIS schools, Johnsen and Hillcrest, spent more per pupil than the public schools; in part this difference may be regional, since the sample independent schools are located on the East Coast while the public school districts are found in smaller communities in the South, West, and Far West, where the costs of living are lower. Size, too, is an important factor, with the private schools enrolling between 461 and 653 pupils in kindergarten through 12th grade, meaning that these schools have only a small number of pupils per grade level, which may also contribute to determining costs per student.

Applying the Model to the Three Private Schools

THE SCHOOL SITE ALLOCATIONS MODEL was applied to Johnsen, Hillcrest, and St. Grace. The first step in the process was to separate the institutional costs from those directly related to school operations and instruction, to gain information about how each school is spending its resources inside and outside the classroom.

As described above, LEVELS A through E represent those expenses related to central or "institutional" functions that can be separated logically from the more internal functions related to the education of students in the school itself. Levels a through e represent these latter, "school-site" expenses.

Case Studies

TABLE 5 PRESENTS THE RESULTS of our analysis of "school-site" level and "institutional" level expenditures for Johnsen, Hillcrest, and St. Grace schools.

At Johnsen, "school-site" level expenses amounted to $3.7 million, $8,116 per student, or 81.3 percent of total expenses. "Institutional" level expenses were $0.863 million, $1,872 per student, or 18.7 percent of total expenses. Combined expenses for classsroom instruction and pupil support, at both levels, represented 66.5 percent, or two thirds, of total expenses.

At Hillcrest, "school-site" and "institutional" level expenses split differently—73.1 percent and 26.9 percent, respectively. Combined classroom instruction and pupil support expenses at both "school-site" and "institutional" levels were 50.8 percent of total expenses.

At St. Grace, "school-site" expenses constituted 89.9 percent and "institutional" expenses 10.1 percent of total expenditures, while the combined classroom instruction and pupil support functions accounted for 60.9 percent of total expenses.

The "institutional" expense, as a proportion of total expenses, is thus more than twice at the independent schools what it is at the parochial school. On the other hand, combined instructional and pupil support expenses represent comparable proportions of total expense at all three schools.

Table 5 Spending for Each Function at "School Site" and "Institutional" Levels Johnsen, Hillcrest, and St. Grace Schools, 1990–91

		Functions: "School-Site" and "Institutional" Levels					
School	Enrollment	a/A Admin	b/B Building	c/C Teacher Support	d/D Pupil Support	e/E Instruction	Total
Johnsen	461						
		Level a	**Level b**	**Level c**	**Level d**	**Level e**	**a -> e**
School-Site		240,541	551,693	5,743	156,045	2,787,606	3,741,628
Per pupil		522	1,197	12	338	6,047	8,116
Percent		5.2	12	0.1	3.4	60.5	81.3
		LEVEL A	LEVEL B	LEVEL C	LEVEL D	LEVEL E	A -> E
Institutional		681,800	61,229	0	64,695	55,133	862,927
Per pupil		1,479	133	0	140	120	1,872
Percent		14.8	1.3	0	1.4	1.2	18.7
Total		922,341	612,992	5,743	220,740	2,842,739	4,604,556
Per pupil		2,001	1,330	12	479	6,166	9,988
Percent		20	13.3	0.1	4.8	61.7	100
Hillcrest	653						
		Level a	**Level b**	**Level c**	**Level d**	**Level e**	**a -> e**
School-Site		413,743	1,056,463	121,295	681,489	2,948,407	5,221,397
Per pupil		634	1,618	186	1,044	4,515	7,996
Percent		5.8	14.8	1.7	9.5	41.3	73.1
		LEVEL A	LEVEL B	LEVEL C	LEVEL D	LEVEL E	A -> E
Institutional		1,012,255	783,318	121,219	0	243	1,917,005
Per pupil		1,550	1,200	186	0	0.4	2,936
Percent		14.2	11	1.7	0	0	26.9
Total		1,425,968	1,839,781	242,514	681,489	2,948,650	7,138,402
Per pupil		2,184	2,817	371	1,044	4,516	10,932
Percent		20	25.8	3.4	9.5	41.3	100
St. Grace	630						
		Level a	**Level b**	**Level c**	**Level d**	**Level e**	**a -> e**
School-Site		264,512	450,150	9,970	359,152	1,106,828	2,190,611
Per pupil		420	715	16	570	1,757	3,477
Percent		10.9	18.5	0.41	14.7	45.4	89.9
		LEVEL A	LEVEL B	LEVEL C	LEVEL D	LEVEL E	A -> E
Institutional		58,630	169,350	0	18,610	0	246,590
Per pupil		93	269	0	30	0	391
Percent		2.4	6.9	0	0.8	0	10.1
Total		323,142	619,500	9,970	377,762	1,106,828	2,437,201
Per pupil		513	983	16	600	1,757	3,869
Percent		13.3	25.4	0.41	15.5	45.4	100

Comparing the Samples of Private and Public Schools

TABLE 6 SUMMARIZES THE DATA on the three private schools and makes comparisons with corresponding data (i.e., averages) from the eight public school districts. The table shows total per-pupil expense (column 2); "institutional" expenses, LEVELS A through E (column 3); "school-site" expenses, levels a through e (column 4); non-classroom costs (column 5); and classroom costs (column 6). In each column, per-pupil costs and percentages of total expense are indicated.

Several differences are evident. First, the NAIS schools spend more per pupil, presumably in part for the reasons mentioned earlier. Second, public school District C, the highest in this category, spent 20.43 percent at the central or "institutional" loca-

Table 6 Private School and Public School Comparisons
Funding at Institutional (Central), School Site, and Classroom Levels, 1990-91

School or District	Per-Pupil Total	Total Institutional (LEVELS A-E)	Total School-Site (Levels a-e)	Non-Classroom (Levels a-d)	Classroom Instruction (Level e)
Johnsen	$9,988 100.00%	$1,872 18.74%	$8,116 81.26%	$2,069 20.71%	$6,047 60.54%
Hillcrest	$10,932 100.00%	$2,936 26.85%	$7,996 73.15%	$3,481 31.84%	$4,515 41.30%
St. Grace	$3,869 100.00%	$391 10.12%	$3,477 89.88%	$1,720 44.46%	$1,757 45.42%
District A	$3,024 100.00%	$338 11.17%	$2,687 88.83%	$858 28.37%	$1,828 60.44%
District B	$8,098 100.00%	$1,287 15.89%	$6,811 84.11%	$2,096 25.87%	$4,715 58.23%
District C	$4,913 100.00%	$1,004 20.43%	$3,909 79.57%	$1,221 24.85%	$2,688 54.72%
District D	$5,053 100.00%	$450 8.91%	$4,603 91.09%	$1,555 30.77%	$3,048 60.32%
District E	$3,723 100.00%	$218 5.84%	$3,505 94.15%	$1,151 30.93%	$2,354 63.21%
District F	$3,839 100.00%	$306 7.97%	$3,533 92.03%	$1,327 34.57%	$2,206 57.47%
District G	$4,507 100.00%	$546 12.13%	$3,960 87.87%	$1,175 26.07%	$2,786 61.82%
District H	$4,073 100.00%	$467 11.46%	$3,606 88.54%	$1,116 27.40%	$2,490 61.13%

tion, comparing with the 18.74 percent and 26.85 percent at Johnsen School and Hillcrest Prep, respectively. The range among the public systems extended down to 7.97 percent at District F and 5.84 percent at District E for central expenses, LEVELS A–E (column 3).

Third, the Johnsen School spent 60.54 percent at level e, Classroom Instruction (column 6), which is the national average for public schools and closely in keeping with our findings for the eight public school systems. Hillcrest and St. Grace were somewhat lower at 41.3 percent and 45.42 percent, respectively, which can be compared to the 54.72 percent in District C.

Tables 7 and 8 show "outliers," or the highest and lowest spending schools, among elementary and high schools, respectively, in the public school sample—these are individual schools, not districts, since the SSAM permits analysis of individual schools as well as systems. Column 7 shows the percentage of the districts' average per-pupil costs for all schools that reach the outlier school classrooms in the level e, Instruction, category. The corresponding figures for the two NAIS schools (see Table 5) are 61.7 percent and 41.3 percent.

Observations

THESE DATA MAY HELP YOUR SCHOOL to reflect on the allocation of its financial resources from an unfamiliar perspective and perhaps suggest ways of making these resources go further. Independent schools are special because of their unique mission, program, and attention to students. Smallness probably explains some of the higher costs; special programs, too, generate special expenditures, although one might have expected that the proportional allocation of resources to the classroom function (level e) would be higher in independent schools. Independent schools, too, have to support all the services at one school that a public school system can share across schools; hence, management, personnel, accounting, public and government relations, contracts, and maintenance are centralized in public schools with the costs spread across a wide array of schools, while the individual independent school must absorb all these functions on top of the costs of running and maintaining its educational and extracurricular programs.

Since independent schools tend to have smaller enrollments than public schools and feel great pressures for extensive programs and services, economies of scale in carefully selected areas might help to reduce administrative and operational costs. Implementation of such economies on an expanded scale could lead to reductions in tuitions or to the allocation of increased funds to instruction and student support services (see Figure 15). Through national, state, and local associations and other special-purpose groupings, independent schools do already take advantage of economies of scale in a number of areas (e.g., legislative affairs, pensions and annuities, health and liability insurance, payroll services, group purchasing). Where independent schools with comparable academic programs and standards are in close proximity to each other, some also coordinate the interchange of students in classes. There is probably considerable room for more inter-school collaboration in other areas of school operations.

Table 7 Elementary School Classroom Costs, 1990–91
Eight Public School District High and Low "Outliers"

Site	Category	Per-Pupil total	Per-Pupil to School		Per-Pupil to Classroom	% of System	% of School Site
		$	$	%	$	%	%
A	Av. Total	3,024	2,686	88.8	1,828	60.5	68.1
	School High		3,125	103.3	2,223	73.5	71.1
	School Low		2,121	70.1	1,452	48.0	68.5
B	Av. Total	7,693	6,577	85.5	4,573	59.4	69.5
	School High		7,193	93.5	5,097	66.3	70.9
	School Low		4,662	60.6	3,562	46.3	76.4
C	Av. Total	4,913	3,909	79.6	2,688	54.7	68.8
	School High		3,926	79.9	2,818	57.4	71.8
	School Low		2,670	54.3	1,964	40.0	73.6
D	Av. Total	5,037	4,580	90.9	3,048	60.5	66.6
	School High		4,305	85.5	3,089	61.3	71.8
	School Low		3,601	71.5	2,421	48.1	67.2
E	Av. Total	3,730	3,512	94.2	2,354	63.1	67.0
	School High		3,183	85.3	2,350	63.0	73.8
	School Low		2,799	75.0	1,903	51.0	68.0
F	Av. Total	3,839	3,533	92.0	2,206	57.5	62.4
	School High		4,653	121.2	3,009	78.4	64.7
	School Low		2,598	67.7	1,491	38.8	57.4
G	Av. Total	4,507	3,960	87.9	2,786	61.8	70.4
	School High		5,056	112.2	3,489	77.4	69.0
	School Low		3,131	69.5	2,034	45.1	65.0
H	Av. Total	4,073	3,606	88.5	2,490	61.1	69.1
	School High		5,352	131.4	3,666	90.0	68.5
	School Low		2,328	57.2	1,401	34.4	60.2

Notes: Column 7, "% of System," is column 6 divided by column 3.
Column 8, "% of School Site," is column 6 divided by column 4.

Figure 15 depicts the relationship between expenditures for direct "school-site" services to students (levels d and e), other "school-site" programs and services (levels a, b, and c), and "institutional" expenditures (Levels A through E). By reducing expenditures on the left side of the equation and increasing those on the right, independent schools may be able to enhance the scope of their educational and support services for students by achieving further administrative and operational efficiencies. Hence, more efficient use of plant, facilities, vehicles, utilities, and management (Levels A/a and B/b) could mean that more resources are available for classrooms and student support (levels d and e). Generalizing from our sample of two, it appears that inde-

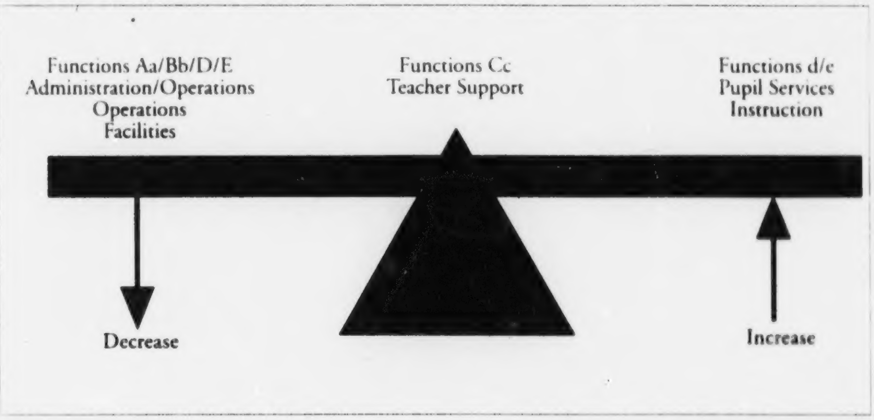
Table 8 High School Classroom Costs, 1990–91
Eight Public School District High and Low "Outliers"

Site	Category	Per-Pupil total $	Per-Pupil to School $	Per-Pupil to School %	Per-Pupil to Classroom $	% of System %	% of School Site %
A	Av. Total	3,024	2,686	88.8	1,828	60.4	68.1
	School High		3,338	110.4	2,120	70.1	63.5
	School Low		2,731	90.3	1,954	64.6	71.5
B	Av. Total	7,693	6,577	85.5	4,573	59.4	69.5
	School High		9,027	117.3	5,708	74.2	63.2
	School Low		9,027	117.3	5,708	74.2	63.2
C	Av. Total	4,913	3,909	79.6	2,686	54.7	68.7
	School High		4,954	100.8	2,992	60.9	60.4
	School Low		4,076	83.0	2,464	50.2	60.5
D	Av. Total	5,037	4,580	90.9	3,038	60.3	66.3
	School High		5,632	111.8	3,435	68.2	61.0
	School Low		5,632	111.8	3,435	68.2	61.0
E	Av. Total	3,730	3,512	94.2	2,354	63.1	67.0
	School High		4,449	119.3	2,933	78.6	65.9
	School Low		4,234	113.5	3,003	80.5	70.9
F	Av. Total	3,839	3,533	92.0	2,206	57.5	62.4
	School High		4,540	118.3	2,701	70.4	59.5
	School Low		3,606	93.9	2,179	56.8	60.4
G	Av. Total	4,507	3,960	87.9	2,785	61.8	70.3
	School High		5,292	117.4	3,698	82.1	69.9
	School Low		3,905	86.6	2,725	60.5	69.8
H	Av. Total	4,073	3,606	88.5	2,490	61.1	69.1
	School High		5,499	135.0	3,423	84.0	62.2
	School Low		3,924	96.3	2,702	66.3	68.9

Notes: Districts B and D each have only one high school.
Column 7, "% of System," is column 6 divided by column 3.
Column 8, "% of School Site," is column 6 divided by column 4.

pendent schools have some room to move, some ability to reallocate resources while actually enhancing the efficiency of their operations. (In using the SSAM data for the two independent schools, we recognize the limitations with regard to generalizing from this small sample. Yet similarities among NAIS member schools make some generalizations appropriate.) The School Site Allocations Model, as refined, is now in the hands of the leaders of the three private schools, and they can use it to their own advantage. Assuming that demands for increased accountability will continue or even increase in the future, we hope you will welcome analytic tools that help to explain independent school financial operations and to compare them with those of public schools.

Figure 15 Balance of Administration/Operations with Direct Services and Instructional Services for Students



Applying the SSAM to two test-case independent schools highlights, among other things, the lower proportion of total expenditures going "to the classroom" in independent schools as compared with public schools. In conjunction with data from several other sources, this contrast is particularly relevant to the sensitive issue of student-teacher ratio in independent schools.

To the SSAM data we add three other key comparative measures: total expense per student, student-teacher ratio, and average teacher salary. The data are summarized in Table 9.

The differences in the public and private school data reflect organizational, structural, and philosophical differences between the two sectors. We will briefly consider here some implications of the trade-offs your school may want to consider between student-teacher ratio, average teacher salary, and total expense per student.

With 17 students, representing an average of $5,500 each in financial resources, behind each teacher, public schools expend a total of $93,500 per teacher, of which 60 percent, or $56,100 per teacher, finds its way "to the classroom," according to the SSAM analysis. Of this amount, approximately 59 percent, or $33,000, is allocated to teacher salaries and the remaining 41 percent to other costs related to classroom instruction.

By contrast, in independent day schools, 10 students, representing an average of $8,500 each in financial resources, support a total expenditure of $85,000 per teacher, of which 51 percent, or $43,350, goes "to the classroom." The proportion of this amount allocated to salaries is $26,000, or 60 percent, a percentage closely comparable to that for public schools.

To the extent that we are considering public schools as a benchmark in the context of this discussion, these comparisons suggest that independent schools could lower their per-student costs or increase their teacher salaries or do a combination of both by increasing their student-teacher ratios.

The affordability challenge to independent schools is to reduce their per-student expenses *while retaining their distinctiveness.* This challenge may be interpreted differently by each independent school. Some may feel that their distinctiveness is most

Table 9 Comparison Between Public and Independent Schools, 1990–91

	Public Schools	NAIS Day Schools
Expense per Student	\$5,500[1]	\$8,500[2]
Student-Teacher Ratio	17:1[3]	10:1[4]
% Dollars to Classroom	60%[5]	51%[6]
Average Teacher Salary	\$33,000[7]	\$26,000[8]

Sources:

[1] DIGEST OF EDUCATION STATISTICS: 1992, Table 156, (approximate mean of "total" and "current" expenditures).

[2] NAIS STATISTICS 1992, Table 71 (reproduced on p. 31).

[3] DIGEST OF EDUCATION STATISTICS: 1992, Table 84.

[4] NAIS STATISTICS 1992, using data from Tables 48 and 52.

[5] See Table 6, "Private School and Public School Comparisons," on p. 54. This figure is the mean for the eight public school systems.

[6] See Table 6, "Private School and Public School Comparisons," on p. 54. This figure is the mean for the two independent schools.

[7] DIGEST OF EDUCATION STATISTICS: 1992, Table 72.

[8] NAIS STATISTICS 1990–91, Vol. 1, Table 6.

closely associated with the student-teacher ratio. Others may consider that the quality of their faculties is their greatest distinguishing feature and, to the extent that quality is related to teacher salaries, conclude that higher salaries are even more important than low student-teacher ratios. Yet others may explore how organizational, programmatic, or physical plant factors influence the percentage of "classroom instruction" expenditures and consider strategies to change this ratio over time.

Because teacher salaries and benefits characteristically account for about 40 percent of total per-student expense at NAIS day schools (see Table 1), attempts to reduce per-student costs through reductions in the number of teachers (with corresponding increases in student-teacher ratio) would seem indicated. Initially, a 10 percent increase in student-teacher ratio from 10:1 to 11:1 will yield a reduction in cost per student of a little less than 4 percent. The subject of student-teacher ratio is more fully explored in chapter VI. Comprehensive strategies for substantial reductions in expense per student are likely to combine changes in student-teacher ratio with changes in other factors, such as financial assistance and educational program variety. These two areas are discussed more fully in chapters V and VII, respectively.

CONCLUSION

Peter Aitken

THE EXTENT TO WHICH INDEPENDENT SCHOOLS ARE TUITION DRIVEN means that revenue is likely to remain closely related to student numbers. Teacher salaries and benefits are major components of total expenses. Thus tuitions and costs per student are inextricably linked to the student-teacher ratio.

Other costs, less closely tied to student and teacher numbers, make up substantial portions of total operating expense, especially in boarding schools. Reducing these costs often depends on how the physical plant is designed, maintained, and used.

Evidence that cost per student is related to school size (enrollment) suggests the need for schools to understand the relationship before assuming that downsizing will help to reduce operating losses. In some cases, increased size may be a more logical solution. If space limitations or other constraints prevent a school from increasing its enrollment, alternative strategies may include academic, administrative, or extracurricular collaborations with other institutions.

The outlier study highlights the range of selected operational characteristics among independent schools. As a first step in exploring avenues to cost reduction, you might locate your school in relation to these key indicators and explore the implications of planned change over a period of time.

The deductibility of mortgage interest and local property taxes from federal income taxes assists parents in paying the de facto "tuitions" of public schools in affluent communities. Federal tax structure supports the "choice" made by affluent parents to live in school districts with high dollar commitments to each child's education. For families who cannot afford to live in such communities, the financial aid programs of independent schools ought to represent a significant opportunity. But the federal tax structure works against them. Only two out of every three dollars of parents' earnings that fund independent schools' financial aid programs actually reach financial aid recipients. We sense that there may be an opportunity here for one or more independent schools to work with imaginative tax lawyers and foundations to develop new approaches to financial aid funding that would level the playing field, extending to more low-income and moderate-income families opportunities to make choices about schooling in ways that affluent families already enjoy.

The School Site Allocations Model permits the comparative analysis of independent and public school expense patterns. SSAM has contributed to a better understanding of resource allocation in public schools in the context of growing demands for greater accountability. As independent schools encounter increasing scrutiny from legislative, political, and economic perspectives, they too will be well served by such models.

IV

Financial Equilibrium: Balancing the Present and the Future

Peter Aitken
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INTRODUCTION

THE CONCEPT OF FINANCIAL EQUILIBRIUM WAS FIRST FORMALLY DEVELoped as a planning methodology by David Hopkins, Bill Massy, and others at Stanford University under a grant from the Lilly Endowment between 1974 and 1978 (Hopkins and Massy, 1981). As Hopkins and Massy themselves put it: "The idea behind long-run financial equilibrium is simply that in addition to having the budget in balance in a given year, the aggregate growth rates of income and expense should be equal. When underlying economic forces tend to produce equality in growth rates, and the initial budget is in balance, we describe the institution as being in a state of dynamic equilibrium, or more precisely, of LRFE." They give an analogy to illustrate the idea further:

> "An airplane that is properly balanced and trimmed in flight is in aerodynamic equilibrium: only a minimum amount of intervention by the pilot is needed to keep it flying straight and level. On the other hand, it is a constant struggle to keep an improperly trimmed craft from plunging disastrously. …Planners must understand the conditions that lead to financial equilibrium and set their institutions' policies so as to minimize start-stop budgeting and the financial crises which tend to undermine academic excellence."

While the roles in the operating budget of revenue sources such as tuition, fees, gifts, and other program income, and of expenses such as those for salaries, food, energy, materials, and supplies are usually well understood, relationships between plant expense, endowment income, and multi-year budgets are often less well recognized. For this reason, the Research Group concluded that it's essential for schools to gain an understanding of long-term financial equilibrium. If your school, like most, is grappling with financial issues, this concept is an important prerequisite for achieving changes in relationships between revenues and expenses over a period of years.

The long-term financial equilibrium model embodies four principles:

- Current revenues should equal or exceed current expense—i.e., the current operating budget should be balanced;
- The rate of growth in revenues should equal or exceed the rate of growth in expense—i.e., future budget problems should be anticipated and prevented;
- The value of the endowment should be either preserved or increased;
- The value of the physical plant should be either preserved or increased.

Because financial equilibrium is a tool to help schools manage their resources wisely and with commitment to the long-term health of the school, it is useful to explore financial equilibrium in the context of strategic planning. Strategic planning helps a school craft a vision for its future and a means of achieving that vision. Financial equilibrium is a concept that helps a school determine what programs are affordable as it implements the vision. Strategic planning relies on a thorough knowledge of the external environment in which a school operates, along with a genuine and critical understanding of the strengths and weaknesses within the school. Strategic planning helps a school establish a long-term, sustainable competitive advantage and develop day-to-day management philosophies and practices that reflect its understanding of mission and context. Strategic planning will help a school anticipate future events and position itself to be able to respond to them in a successful and satisfying way. Strategic planning helps a school identify areas of focus and priority. It does mean making the hard decisions—not being everything to everybody. In a period during which resources are constrained, schools should consider focusing on selective excellence. Strategic planning also involves developing budgets and management plans that are consistent with stated priorities. Finally, strategic planning should provide a context for budgetary and management decisions.

Financial equilibrium is an important component of strategic planning. Both financial equilibrium and strategic planning take the long view. These tools will be essential in wrestling with the affordability challenge, which is not a problem we can solve overnight. Strategic planning and financial equilibrium complement each other. Financial decisions must be consistent with the priorities of the school. In the absence of established priorities, it is difficult to determine the appropriate trade-offs as schools work toward achieving financial equilibrium. Financial plans are not ends in and of themselves, but rather means to reach management goals.

CURRENT REVENUES AND EXPENSES

A BALANCED CURRENT-YEAR BUDGET IS THE FIRST ESSENTIAL ELEMENT OF financial equilibrium. An unbalanced budget should be a temporary phenomenon only. Your budget should reflect the priorities that emerge from strategic planning and should include sufficient funds to ensure the long-term financial stability of the school, as described below. The pricing decisions and revenue projections used in the budget should also be linked to strategic goals, as pricing is not just a revenue decision but a strategic decision about where a school will position itself in the marketplace. In addition, the budget is an important management tool that should be used to help collect information about the school and to hold faculty and administrators accountable for management decisions and for certain outcomes.

In order to use the budgeting process to help achieve strategic priorities and financial equilibrium, we urge school heads and planning teams to use interactive budget models. You needn't invest in expensive or complicated hardware and software to develop such a model: a simple spreadsheet can be constructed that will allow you to explore relationships between revenues and expenditures in the current year—and over time. We have included a sample spreadsheet as Table 10D.

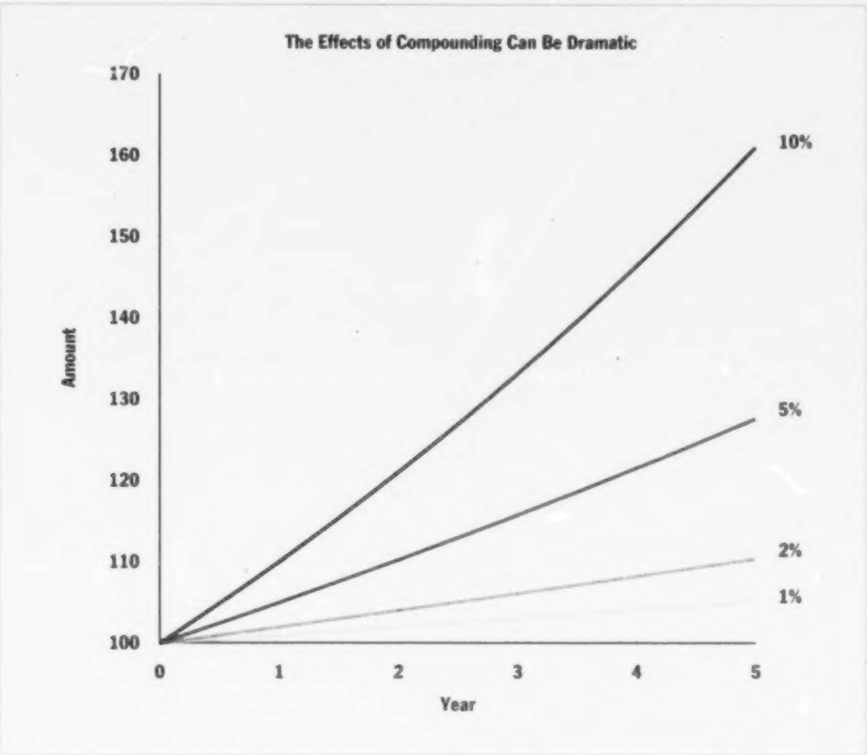
BALANCING REVENUES AND EXPENSES OVER TIME

ALTHOUGH THE CURRENT BUDGET MAY BALANCE, TROUBLE MAY YET LIE ahead. A school should compare projected growth in revenues over time with projected growth in expenditures, taking into account future commitments and trends. Often, a current budget does not reflect expenses being deferred. Such deferrals might include unfunded pension liabilities, unfunded maintenance, and unfunded tuition remission or other benefits. To correct for such unacknowledged expenses, a model must be created that will allow the school to assess its financial condition over time. Consider, for example, the effect of compounding expenses in future years. Figure 16 illustrates this effect. The lowest line shows how $100 would grow at a rate of increase of 1 percent per year. The top line shows how it would grow at a rate of increase of 10 percent a year. This graph illustrates the exponential effect. For example, this year's salary increase will mean that next year's increase will be calculated from a higher base, thereby carrying forward forever not only the increase itself but the increased base from which you will calculate all future increases.

The importance of modeling your school's long-term financial condition cannot be overstated. This exercise will allow you to keep careful track of future commitments and to ensure accurate current budgets. Hidden costs that carry forward include changes in base salaries and benefit plans, maintenance of new facilities and equipment (including funds for reinvestment in technology), financial aid, and certain organizational changes. If the current-year budget does not balance or if problems are developing in the future, the model will clearly illustrate the magnitude of such problems.

The sample spreadsheets, Tables 10A, 10B, and 10C, illustrate a base plan with two variations, and Table 10D is a blank form for your school's use. Assumptions are stated at the bottom of each page. Note that in Table 10A the budget is balanced in 1993 and, after minor deficits from 1994 through 1996, the 1997 and 1998 budgets show modest surpluses.

Figure 16 Long-Term Relationship Between Revenues and Expenses



The first variation, shown in Table 10B, indicates operating deficits in each of the years 1994–1998 as a result of increasing financial aid by one-half of 1 percent of tuition per year between 1994 and 1998 and increasing employee salaries by one-fourth of 1 percent above the base plan. Note that in addition to the operating deficits created by the above policy decisions, endowment use increases from 5 percent to 7.6 percent of market value and is rising. This higher rate will reduce the real value of the endowment.

The second variation, shown in Table 10C, increases spending/reserving for physical plant renewal from 1 percent of the replacement value ($75 million in 1993), a rate too low to maintain the value of the physical plant, to 2 percent by 1998. You will note even higher operating deficits and even greater erosion of the endowment as a result of this action.

The two variations reflect the dramatic consequences that apparently small percentage increases in spending patterns can have in the future. Clearly, heads and planning teams must forecast the future impact of policy decisions if they plan to maintain a sustainable balance of operating expenses with the use of endowment and plant resources.

Table 10A Revenue and Expenses ($000s)

	1993	1994	1995	1996	1997	1998
Revenue						
Tuition/Fees	8,463	8,842	9,238	9,652	10,085	10,537
Endowment	500	502	518	536	555	576
Annual Giving	1,000	1,035	1,071	1,109	1,148	1,188
Other	250	259	268	277	287	297
Total	10,213	10,638	11,095	11,574	12,075	12,598
Expenses						
Salary (Net)	4,150	4,326	4,510	4,702	4,902	5,110
Teaching Faculty	1,577	1,644	1,714	1,787	1,863	1,942
Administrative Faculty	1,141	1,189	1,239	1,292	1,347	1,404
Staff	1,432	1,493	1,557	1,623	1,692	1,764
Benefits	1,286	1,123	1,173	1,223	1,274	1,329
Financial Aid	1,247	1,303	1,362	1,423	1,487	1,554
Other	3,030	3,136	3,245	3,385	3,505	3,627
Renewal	500	803	831	861	891	922
Debt	0	0	0	0	0	0
Total	10,213	10,691	11,121	11,594	12,059	12,542
Surplus (Deficit)	0	(53)	(26)	(20)	16	56
Assumptions						
Inflation	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%
Tuition Boarding (Real)	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Tuition Day (Real)	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Annual Giving (Real)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Endowment Use†	5.0%	5.4%	5.1%	5.0%	4.7%	4.3%
FTE Teaching	49.8	49.8	49.8	49.8	49.8	49.8
FTE Admin.	24.5	24.5	24.5	24.5	24.5	24.5
FTE Staff	62.4	62.4	62.4	62.4	62.4	62.4
Fringe %	26.0%	26.0%	26.0%	26.0%	26.0%	26.0%
Financial Aid	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%
Faculty Salary (Real)	0.0%	0.75%	0.75%	0.75%	0.75%	0.75%
Staff Salary (Real)	0.0%	0.75%	0.75%	0.75%	0.75%	0.75%
Boarding Enrollment	400	400	400	400	400	400
Day Enrollment	100	100	100	100	100	100
Total Enrollment	500	500	500	500	500	500
Boarding Tuition	17,500	18,288	19,110	19,970	20,869	21,808
Day Tuition	13,125	13,716	14,333	14,978	15,652	16,356

Endowment market value FY93 $10,000,000
Endowment grows at the rate of 5% above the rate of inflation
Plant size 300,000 sq. feet
Plant replacement value $75,000,000

† 13-quarter average

Table 10B Revenue and Expenses ($000s)

	1993	1994	1995	1996	1997	1998
Revenue						
Tuition/Fees	8,463	8,842	9,238	9,652	10,085	10,537
Endowment	500	502	517	532	545	555
Annual Giving	1,000	1,035	1,071	1,109	1,148	1,188
Other	250	259	268	277	287	297
Total	10,213	10,638	11,094	11,570	12,065	12,577
Expenses						
Salary (Net)	4,150	4,337	4,532	4,736	4,949	5,172
Teaching Faculty	1,577	1,648	1,722	1,800	1,881	1,965
Administrative Faculty	1,141	1,192	1,245	1,301	1,360	1,422
Staff	1,432	1,497	1,565	1,635	1,708	1,785
Benefits	1,286	1,126	1,178	1,231	1,287	1,344
Financial Aid	1,247	1,346	1,452	1,565	1,685	1,813
Other	3,030	3,136	3,246	3,386	3,505	3,627
Renewal	500	803	831	861	891	922
Debt	0	0	0	0	0	0
Total	10,213	10,748	11,239	11,779	12,317	12,878
Surplus (Deficit)	0	(110)	(145)	(209)	(252)	(301)
Assumptions						
Inflation	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%
Tuition Boarding (Real)	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Tuition Day (Real)	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Annual Giving (Real)	0%	0.0%	0.0%	0.0%	0.0%	0.0%
Endowment Use[†]	5.0%	5.9%	6.2%	6.8%	7.2%	7.6%
FTE Teaching	49.8	49.8	49.8	49.8	49.8	49.8
FTE Admin.	24.5	24.5	24.5	24.5	24.5	24.5
FTE Staff	62.4	62.4	62.4	62.4	62.4	62.4
Fringe %	26.0%	26.0%	26.0%	26.0%	26.0%	26.0%
Financial Aid	15.0%	15.5%	16.0%	16.5%	17.0%	17.5%
Faculty Salary (Real)	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Staff Salary (Real)	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Boarding Enrollment	400	400	400	400	400	400
Day Enrollment	100	100	100	100	100	100
Total Enrollment	500	500	500	500	500	500
Boarding Tuition	17,500	18,288	19,110	19,970	20,869	21,808
Day Tuition	13,125	13,716	14,333	14,978	15,652	16,356

Endowment market value FY93 $10,000,000
Endowment grows at the rate of 5% above the rate of inflation
Plant size 300,000 sq. feet
Plant replacement value $75,000,000

[†] 13 quarter average

Table 10C Revenue and Expenses ($000s)

	1993	1994	1995	1996	1997	1998
Revenue						
Tuition/Fees	8,463	8,842	9,238	9,652	10,085	10,537
Endowment	500	502	519	532	540	537
Annual Giving	1,000	1,035	1,071	1,109	1,148	1,188
Other	250	259	268	277	287	297
Total	10,213	10,638	11,096	11,570	12,060	12,559
Expenses						
Salary (Net)	4,150	4,295	4,456	4,601	4,762	4,929
Teaching Faculty	1,577	1,632	1,689	1,748	1,810	1,873
Administrative Faculty	1,141	1,180	1,222	1,264	1,308	1,355
Staff	1,432	1,483	1,535	1,588	1,644	1,701
Benefits	1,286	1,115	1,156	1,196	1,238	1,282
Financial Aid	1,247	1,303	1,362	1,423	1,487	1,554
Other	3,030	3,136	3,235	3,386	3,506	3,626
Renewal	500	803	1,247	1,291	1,781	1,844
Debt	0	0	0	0	0	0
Total	10,213	10,652	11,456	11,897	12,774	13,235
Surplus (Deficit)	0	(14)	(360)	(327)	(714)	(676)
Assumptions						
Inflation	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%
Tuition Boarding (Real)	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Tuition Day (Real)	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Annual Giving (Real)	0%	0.0%	0.0%	0.0%	0.0%	0.0%
Endowment Use[†]	5.0%	5.0%	8.3%	7.9%	11.7%	11.5%
FTE Teaching	49.8	49.8	49.8	49.8	49.8	49.8
FTE Admin.	24.5	24.5	24.5	24.5	24.5	24.5
FTE Staff	62.4	62.4	62.4	62.4	62.4	62.4
Fringe %	26.0%	26.0%	26.0%	26.0%	26.0%	26.0%
Financial Aid	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%
Faculty Salary (Real)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Staff Salary (Real)	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Boarding Enrollment	400	400	400	400	400	400
Day Enrollment	100	100	100	100	100	100
Total Enrollment	500	500	500	500	500	500
Boarding Tuition	17,500	18,288	19,110	19,970	20,869	21,808
Day Tuition	13,125	13,716	14,333	14,978	15,652	16,356

Endowment market value FY93 $10,000,000
Endowment grows at the rate of 5% above the rate of inflation
Plant size 300,000 sq. feet
Plant replacement value $75,000,000

[†] 13 quarter average

Table 10D Revenue and Expenses ($000s)

	1993	1994	1995	1996	1997	1998
Revenue						
Tuition/Fees						
Endowment						
Annual Giving						
Other						
Total						
Expenses						
Salary (Net)						
Teaching Faculty						
Administrative Faculty						
Staff						
Benefits						
Financial Aid						
Other						
Renewal						
Debt						
Total						
Surplus (Deficit)						
Assumptions						
Inflation						
Tuition Boarding (Real)						
Tuition Day (Real)						
Annual Giving (Real)						
Endowment Use[†]						
FTE Teaching						
FTE Admin.						
FTE Staff						
Fringe %						
Financial Aid						
Faculty Salary (Real)						
Staff Salary (Real)						
Boarding Enrollment						
Day Enrollment						
Total Enrollment						
Boarding Tuition						
Day Tuition						

[†] 13 quarter average

PRESERVING OR INCREASING THE ENDOWMENT

THE THIRD PRINCIPLE OF FINANCIAL EQUILIBRIUM ENSURES THAT A school is either preserving or increasing the value (or spending power) of its endowment. Endowments are defined as funds that are set aside to provide institutions with reliable streams of both current earnings and investment principal, to be used in perpetuity unless otherwise designated.

There are three types of endowment funds: true endowment, in which the principal cannot be spent; term endowment, which acts like true endowment for a certain number of years or until a particular condition has been met, at which time the principal becomes available to be spent; and quasi-endowment, funds designated by the board of trustees to function as endowment. The classifications of true and term endowments result from the nature of the understandings between donors and institutions. Quasi-endowment funds, on the other hand, designated by the board of trustees to function as endowment, can be redesignated by the board, if it so chooses, with the principal then becoming available to fund current operations.

Endowments are also classified as either restricted or unrestricted. Again deriving from the nature of understandings between donors and institutions, restrictions may limit the use of income from certain endowment funds to specific purposes. The impact of endowment income on operations depends on the amount and performance of endowment funds, on the effects of restrictions and designations in force, and on the spending decisions that management makes. The impact of size is pretty clear. Certainly a $10,000,000 endowment is going to have a larger impact on operations than a $1,000,000 endowment. But by the same token, the school's spending policy, together with any restrictions that may have been imposed by donors, really determines how much of the investment income can be spent and for what purposes.

Asset management includes three main areas: defining current strategy, allocating assets, and assessing risk. Schools generally adopt one of two investment strategies: "total return," which includes interest, dividends, and appreciation, or "investment yield," which includes interest and dividends only. The dominant strategy in independent schools, as well as in colleges and universities, is that of total return. Using this strategy, a school seeks to maximize the sum of dividends, interest, and capital appreciation, allowing the board to fulfill one of its central obligations: to ensure that the school is there for future as well as current students. By investing both for high current earnings and for long-term reinvested growth, the board can most effectively fulfill that obligation.

Portfolio allocation is largely a function of the investment goals of the school and the school's risk tolerance. Most schools allocate their investments across some combination of stocks, fixed income, and cash, but depending on the level of risk tolerance of the school, as well as on the size of the endowment, a number of other investment vehicles are available, including venture capital, real estate, foreign stocks, and even leveraged buyouts. Most schools try to diversify their investments across a range of vehicles in order to manage the associated risks in a prudent manner.

In addition, there are a number of new pressures on institutions regarding asset selection and income streams. Stock market volatility translates directly into uncertain earnings and creates problems for schools on three fronts. First, it increases investment risks. Second, it can wreak havoc with a spending formula that is based on some sort of rolling average. Third, it increases the need to time endowment draw-down strategically when additional cash is needed for operations. Current proposals to tax endowment income may also directly jeopardize earnings rates.

Schools may also elect to consider the question of socially responsible investing. There are pressures to restrict endowment assets based on the perceived morality of the issuing companies, such as companies doing business in South Africa, companies in the so-called "sin industries" of cigarettes and alcohol, and companies vulnerable to criticism from an environmental perspective. The responses to these pressures vary tremendously across schools.

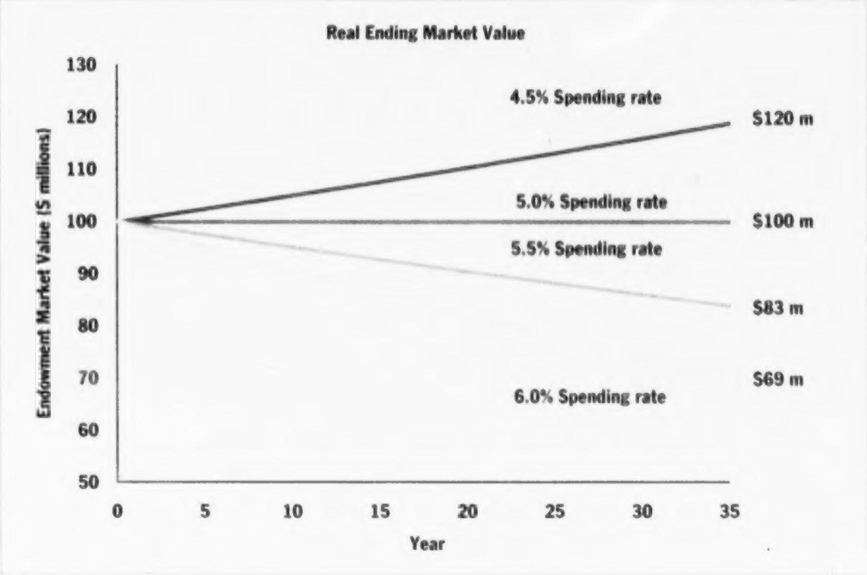
Schools typically adopt one of several different approaches for endowment spending. In the first, which is based on total return, a set percentage of an average market value is spent in each year. The "dividends and interest" practice is one in which the institution spends some or all of the dividends and interest that are received. And finally, the "historical spending level" practice bases spending on a historical level, adjusted usually by a given percentage. Whichever practice is employed, it is critical that the school have an explicit spending policy that preserves the purchasing power of the endowment, i.e., that reinvests in the portfolio at a rate sufficient to assure comparable usefulness of the funds across time.

The concept of preserving purchasing power is illustrated in Figure 17. A $100 million endowment is pictured growing at a constant annual return of 5 percent, but supporting different spending levels over 35 years. At a 5 percent spending level, the value of the endowment will be exactly the same 35 years later—in real terms. At a spending rate of 5.5 percent or 6 percent, the endowment will be smaller at the end of the 35-year period. Most financial planners now agree that schools should spend approximately 4 to 5 percent in spite of the obvious pressures to spend more. Regardless of this objective, however, other revenue sources may be limited and institutions may increase their current draw from the endowment. Doing so will reduce future revenue flows and erode the endowment's purchasing power unless these effects are offset by higher investment returns. Seeking higher returns, however, involves increased levels of risk, creating the challenge that is all too familiar to every treasurer and board finance committee.

Preserving the Physical Plant

SCHOOLS SHOULD VIEW THE PHYSICAL PLANT AS A PHYSICAL ENDOWMENT. Assets in the form of facilities are diverse, including dormitories, classrooms, offices, labs, hockey rinks, vehicles, computers, and many others, and they should be viewed and managed as a portfolio of assets, much in the way an endowment is composed of different asset types. Equilibrium for the physical plant is defined as the maintenance of both functional and financial value over time.

Figure 17 Preservation of the Endowment



Assumptions: Begin with $100 million. Spend a percentage of 3-year ending market value. Project constant annual real return of 5.0%.

Source: Phillips Academy and Cambridge Associates, 1992.

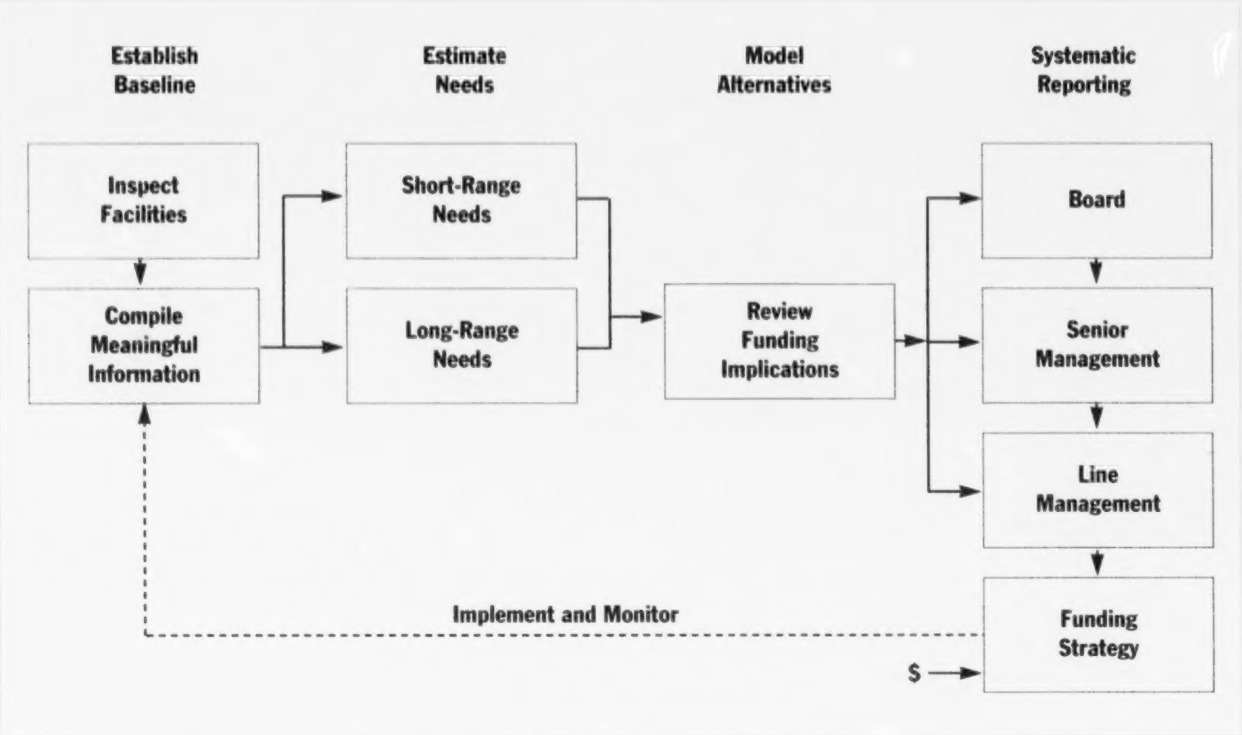
School heads and trustees should recognize the importance of facilities. On many campuses, the facilities area suffers something of an image problem, which undermines prudent and effective management.

A school should start with an accurate, quantified estimate of the current facility condition as well as any deferred maintenance backlog that might exist. It can then use this information to determine appropriate levels of both ongoing renewal funding and the scheduled maintenance of key building components. Keeping the information current is critical so that it can be integrated into accurate budgetary planning.

The maintenance of facilities equilibrium requires capital reinvestment in existing facilities. An appropriate reinvestment rate can be determined based on the age, complexity, and condition of the physical plant. Establishing this rate is similar to setting the spending rate for endowments. Basically, you determine the investment rate that will completely renew the physical plant over a 30-year to 60-year period. Present thinking suggests that an appropriate reinvestment rate is between 2 and 4 percent of the current replacement value of the plant, although most institutions are spending at considerably lower rates.

The diagram in Figure 18 illustrates a facilities management model developed for the National Association of College and University Business Officers (NACUBO). There are four phases to the model. The first establishes a baseline from which you can inspect facilities and compile accurate, meaningful information. The second in-

Figure 18 An Overview of the Facilities Portfolio Management Model


Establish Baseline
Estimate Needs
Model Alternatives
Systematic Reporting
Inspect Facilities
Compile Meaningful Information
Short-Range Needs
Long-Range Needs
Review Funding Implications
Board
Senior Management
Line Management
Funding Strategy
Implement and Monitor
$

Source: Rush, S. E., Managing the Facilities Portfolio, National Association of College and University Business Officers, 1991, p. 6.

volves estimating needs—physical plant needs, both long-term and short-term—then modeling the alternatives and reviewing the funding implications of meeting the needs. In the third phase, the model suggests devising a systematic reporting framework for providing information to the board of trustees and to key administrators. The fourth phase is the development of a funding strategy, at which point the cycle begins again.

CONCLUSION

AS A FIRST STEP IN ASSESSING YOUR SCHOOL'S POSITION IN RELATION TO long-term financial equilibrium, we encourage you to complete a worksheet such as the ones shown in Table 10A, 10B, and 10C. The data on these worksheets are for an NAIS member school and illustrate several of the multi-year equilibrium and trade-off issues discussed in this chapter.

Financial equilibrium embodies four principles: a balanced current budget, balanced revenue and expense projections, preservation of the endowment, and preservation of the physical plant. Schools should view it as an analytical discipline within the context of a long-range plan rather than as an achievable goal. Do not despair if one or more of these four components are out of equilibrium. The goal is to recognize how far out of balance the school is and to work to improve its financial position. With accurate, current information and a clear communication process, your board of trustees and management team can undertake useful planning. Discipline—and probably courage—are important ingredients in building a campus-wide commitment to a long-term financial strategy, particularly in face of the daunting array of short-term pressures and challenges that confront our schools today. If heads and trustees insist on and sustain such a commitment, they fulfill one of the board's central functions—to ensure the long-term financial health and stability of the school.

V

Financial Assistance: How Is It Working and Where Are We Headed?

Peter Aitken
Nancy Kelley

INTRODUCTION

IN THIS CHAPTER, WE RETURN TO OUR DISCUSSION OF THE ROLE OF FINANCIAL assistance in enhancing access to independent schools. In chapter I, we reviewed trends in relationships between tuitions, family finances, and financial assistance programs in independent schools, described rationales for financial assistance programs, and outlined two ways of attempting to measure "access." But the measures of access described in chapter I yield troubling results. One suggests that financial aid programs are operating in a zone of diminishing returns. The other depicts independent schools as growing less and less affordable.

Financial assistance appears to be a key strategy for enhancing access. Collectively, independent schools commit about $350 million, or 10 percent of their total operating budgets, to various forms of financial assistance. Yet policies and objectives underlying financial assistance programs are often unclear and sometimes nonexistent. The administration of financial assistance expenses is almost invariably a secondary responsibility undertaken by a school head, admission director, business manager, or other administrator.

The sums of money involved in financial aid and the related demands on operating budgets are large and growing. Yet measures of progress in terms of access or affordability are discouraging. For all these reasons, we suggest, in this chapter, several analytical techniques that individual schools can use in working toward a clearer understanding of the connection between policy and practice and toward alternative cost structures that will help make their tuitions more affordable. But first, we attempt to restate the fundamental problem as clearly as possible.

MEASURES OF ACCESS AND AFFORDABILITY

IN CHAPTER I, WE DESCRIBED TWO APPROACHES TO MEASURING ACCESS OR affordability. The first approach is to use the proportion of total enrollment represented by financial assistance recipients as a proxy for an index of access. But we pointed out the weakness of this gauge. Only if tuitions and family incomes are rising at approximately the same rate will this measure give a useful indication of access.

The second measure described in chapter I is the independent school affordability index. By taking into account not only tuitions but also family incomes and net worth, this index overcomes the limitations described in the previous paragraph, but it suffers from its own set of disadvantages. First, because it rests on a number of demographic approximations and generalizations, it is inevitably somewhat crude. Second, it cannot address financial resources on which families may draw to make tuition payments but which are not included in Census Bureau and Federal Reserve Board statistics.

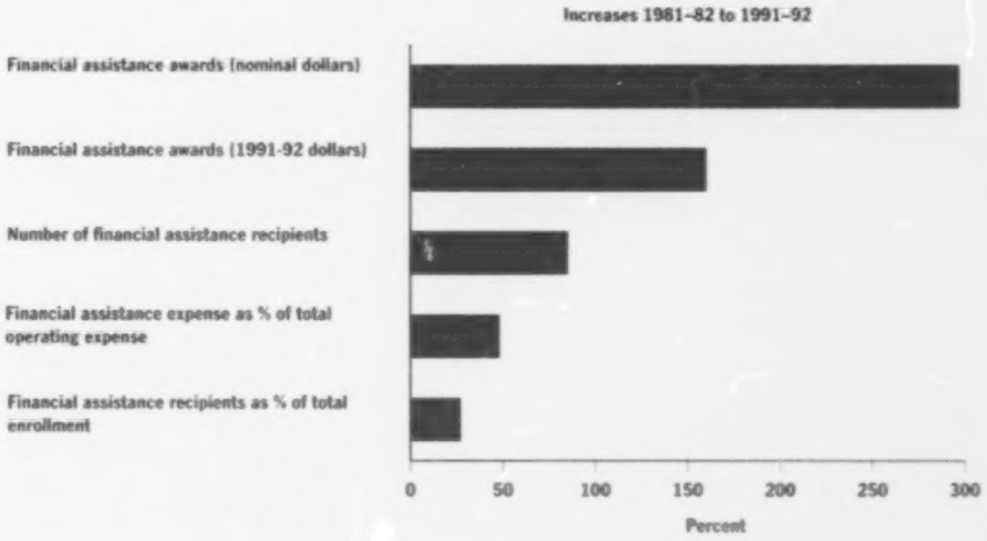
Each of these measures offers a way to assess the results of financial assistance programs. Because the perspectives and assumptions are different, we present results here from applying both measures to aggregate financial assistance data for NAIS member schools during the 1980s. We encourage your school to make its own projections by applying these two measures of access, then to consider such projections in light of your strategic goals for financial aid and tuition remission.

Figures 19 and 20 illustrate that substantial increases in NAIS member schools' commitments to financial assistance during the past 10 years have resulted in only a comparatively small increase in the number of financial assistance recipients as a percentage of total enrollment in member schools. If we project ahead on the basis of recent experience, the implication is that this proportion is likely to reach a ceiling. Furthermore, it seems likely that, viewing independent schools collectively, this ceiling may be at about 20 percent of total enrollment in NAIS member schools. Of course, the figure varies considerably from school to school.

The independent school affordability index suggests that at the end of the 1980s about 11 percent of U.S. families could "afford" independent day schools and about 4 percent independent boarding schools; that these indices were declining; and that the decline was more significant for day schools than for boarding schools. While these are not calculations that individual schools can easily replicate using their own data, we recommend analysis of tuition trends in comparison with local and regional data on family and household incomes as a barometer of "affordability."

Concerns about policy foundations and about the sustainability of financial assistance programs point to the need for thoughtful analysis and strategic planning. Objectives of financial assistance programs and methods of assessing progress toward goals should be explicit. Critical planning issues include a school's proportion of financial assistance recipients, the distribution of awards, the affluent "feel" of the school, its accessibility in terms of both dollars and climate, projected ranges for both

Figure 19 Financial Assistance in NAIS Schools



	Data 1981–82	1991–92	Increase %
Financial assistance awards (nominal dollars)	$89 million	$353 million	297
Financial assistance awards (1991-92 dollars)	$136 million	$353 million	160
Number of financial assistance recipients	39,000	72,000	85
Financial assistance expense as % of total operating expense	7.1	10.5	48
Financial assistance recipients as % of total enrollment	16.4	20.8	27

The real (i.e., inflation-adjusted) value of NAIS schools' commitments to financial assistance has increased by 160 percent in 10 years. Financial assistance commitments have grown from 7.1 percent to 10.5 percent of total operating expense in this period, an increase of nearly 50 percent.

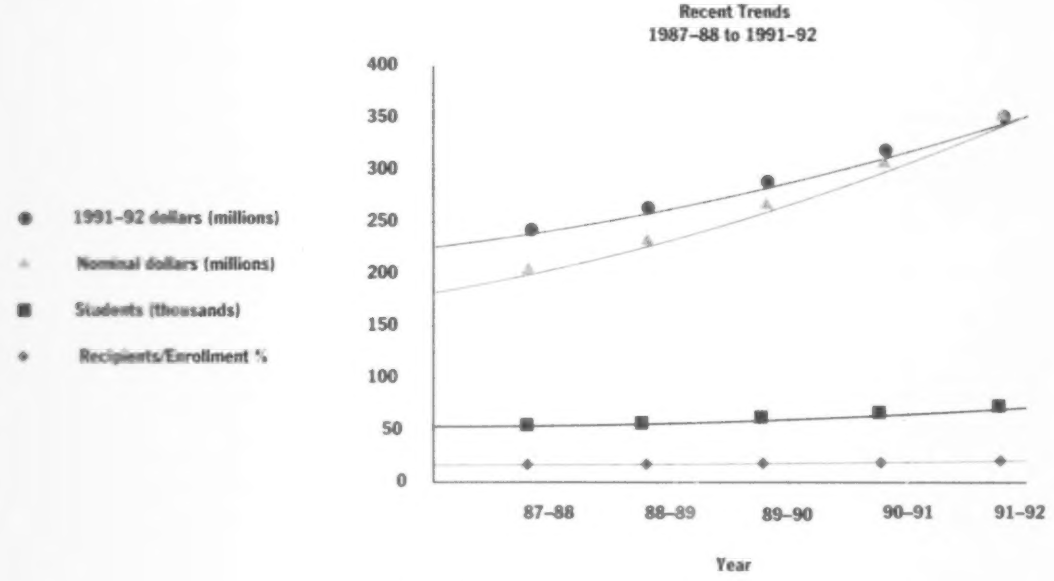
As a proportion of total enrollment, the number of financial assistance recipients has grown by 27 percent in 10 years. Four out of every five students at NAIS schools are full-tuition-paying students.

Source: NAIS STATISTICS SPRING 1983, Table 7.
NAIS STATISTICS 1992, Tables 61, 62, 63, and 68.

tuition and tuition discount, and whether tuition remission is viewed as a faculty benefit or as a form of financial aid. All these factors contribute to defining the school's stance in relation to the evolving rich/poor dichotomy in U.S. society. A school should know where it stands on these issues, what it is trying to accomplish, and how to gauge progress from year to year.

We devote the remainder of this chapter to offering several analytic techniques that you may use in assessing your school's programs and in exploring possible alternative scenarios for the future.

Figure 20 Financial Aid and Tuition Remission



Despite large increases in both nominal and real dollar commitments in recent years, the number of financial assistance recipients as a percentage of total enrollment may be approaching a limit or ceiling.

Data

Financial Assistance	1987–88	1988–89	1989–90	1990–91	1991–92
1991–92 dollars (millions)	241	264	288	316	353
Nominal Dollars (millions)	204	233	267	306	353
Number of students assisted (thousands)	54	57	60	65	72
Recipients as % of total enrollment	16.7	17.4	18.0	19.6	20.8

Sources: NAIS Statistics Spring 1989, Tables 16, 17.
NAIS Statistics Spring 1990, Table 16.
NAIS Statistics 1990–91, Vol. 2, Tables 18, 22, 25.
NAIS Statistics 1992, Tables 61, 62, 63, 68.

ANALYTIC METHODS

Comparative Analysis

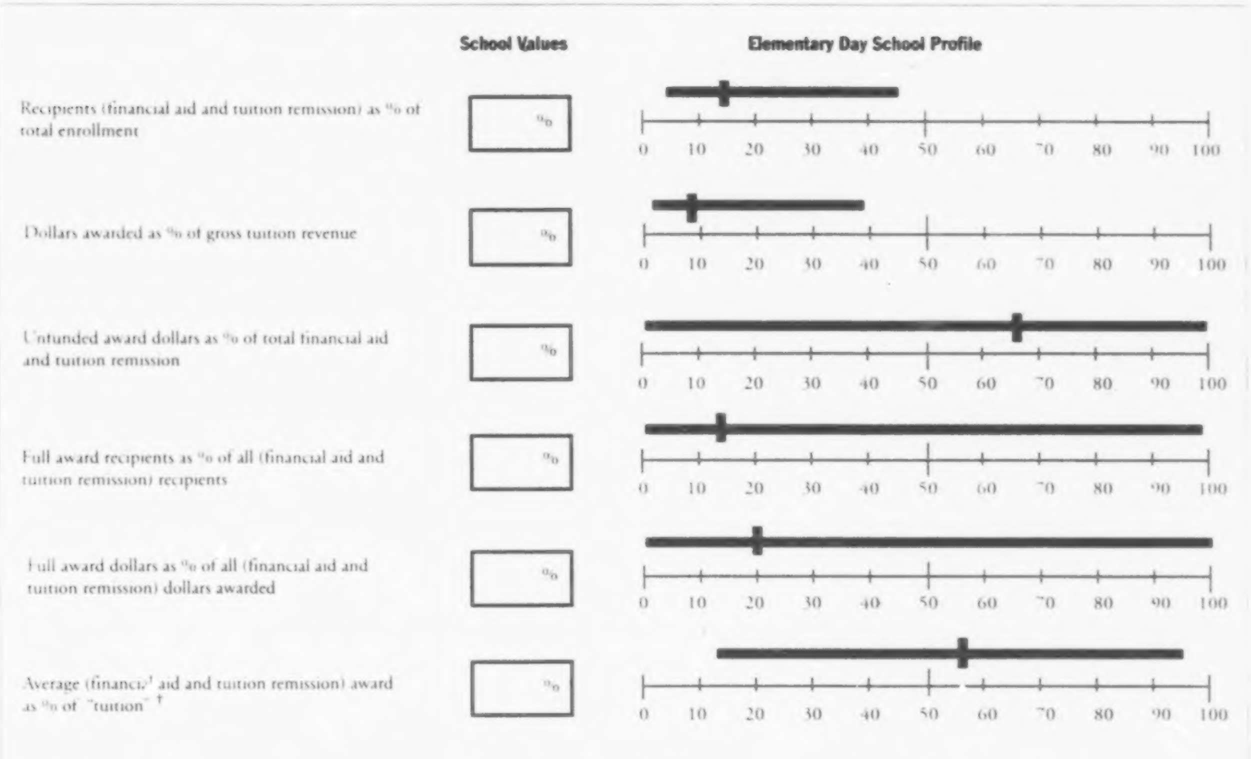
THE FIRST APPROACH IS THE TRADITIONAL, COMPARATIVE ONE. ITS AIM IS to identify general characteristics of a school's financial assistance program and to facilitate comparisons with peer schools. We suggest using the form shown in Table 11 as a worksheet on which to gather or calculate descriptive characteristics of your school's financial assistance program. Figures 21–26 present comparative data for the summary ratios in Table 11 for six categories of NAIS schools. The analysis encompasses need-based financial aid and tuition remission, and excludes no-need or merit awards. The solid horizontal bars indicate the range of values for schools in each category. The short, vertical bars show median values. Numbers are

Table 11 Financial Assistance Analysis

Number of need-based financial aid recipients
Non-faculty/staff children (partial awards)
Non-faculty/staff children (full awards)
Faculty/staff children (partial awards)
Faculty/staff children (full awards)
Total number of recipients
Allocation of need-based financial aid dollars
To non-faculty/staff children (partial awards)
To non-faculty/staff children (full awards)
To faculty/staff children (partial awards)
To faculty/staff children (full awards)
Total need-based financial aid dollars
Number of tuition remission recipients
Partial tuition remission recipients
Full tuition remission recipients
Total number of tuition remission recipients
Allocation of tuition remission dollars
Partial awards
Full awards
Total value of tuition remission awards
Sources of financial aid and tuition remission funding
Restricted endowment income
Other restricted investment income
Restricted gift income
Unfunded
Average award (financial aid and tuition remission)
Total enrollment
Theoretical gross tuition revenue
Summary ratios
FA[1] and TR[2] recipients as % of total enrollment
FA and TR dollars as % of gross tuition revenue
Unfunded FA & TR dollars as % of total FA & TR
Full award recipients as % of all recipients (FA & TR)
Full award dollars as % of all dollars (FA & TR)
Average award as % of tuition[3]

Notes: (1) FA = Need-based financial aid.
(2) TR = Tuition remission.
(3) To avoid the complexity of dealing with graduated tuitions, use a mean tuition figure calculated as gross tuition revenue divided by total enrollment.

Figure 21 Financial Aid and Tuition Remission Analysis, 1990–91



† To avoid the complexity associated with graduated tuitions, "tuition" here is calculated as gross tuition revenue/total enrollment.

Source: NAIS statistics.

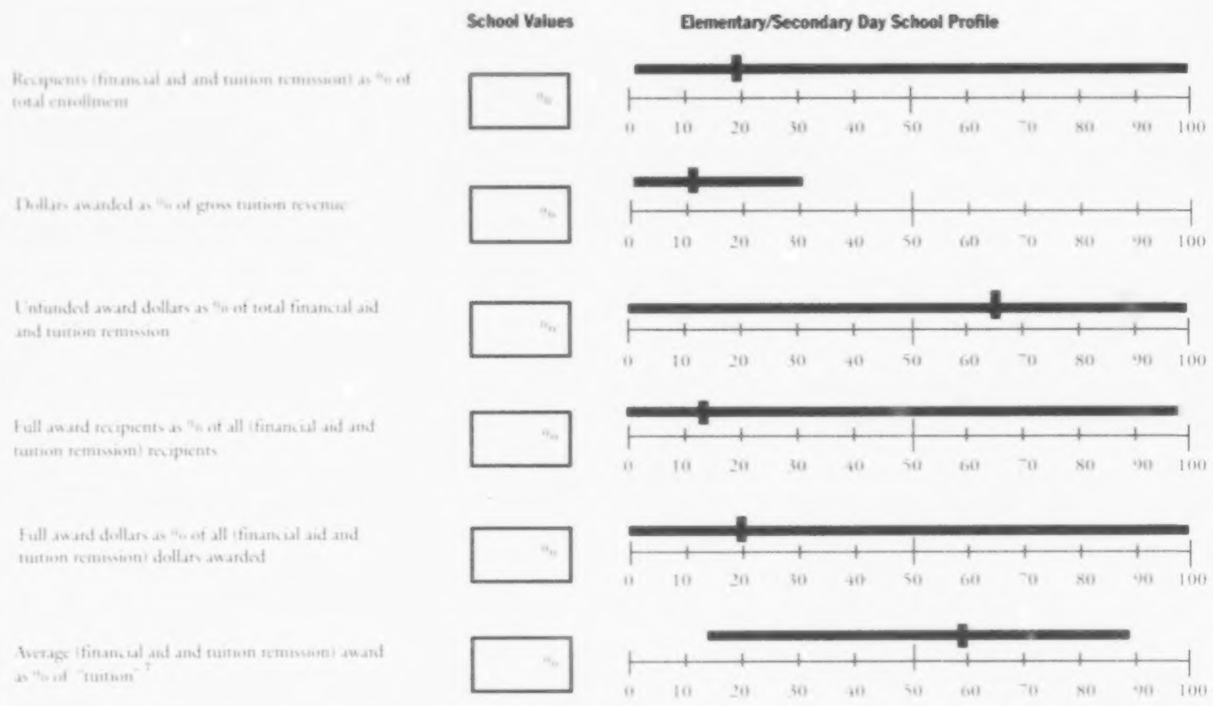
for the 1990–91 school year, the latest year for which data were available at the time this book was being prepared. Schools should use their own 1990–91 data in order to accomplish a meaningful comparison.

The summary ratios selected for display on these pages are important for the following reasons.

As an indicator of access, the number of financial aid and tuition remission recipients as a percentage of total enrollment was discussed in chapter I. Especially if tracked from year to year, it is a potentially helpful index.

The total number of financial aid and tuition remission dollars as a percentage of gross tuition revenue is an indicator of a school's capacity to discount its *price* to students' families. Gross tuition revenue means the theoretical maximum tuition revenue if every student pays full tuition. For a variety of reasons discussed in chapter I, many schools elect to forego a portion of the gross tuition revenue. For example, consider a school with an enrollment of 400 and a tuition of $8,000 that offers a total of $320,000 in need-based financial aid and tuition remission. From the perspective of students' families, the school is offering a *price discount* of 10 percent ($320,000 in financial assistance as a percentage of $3.2 million in gross tuition revenue).

Figure 22 Financial Aid and Tuition Remission Analysis

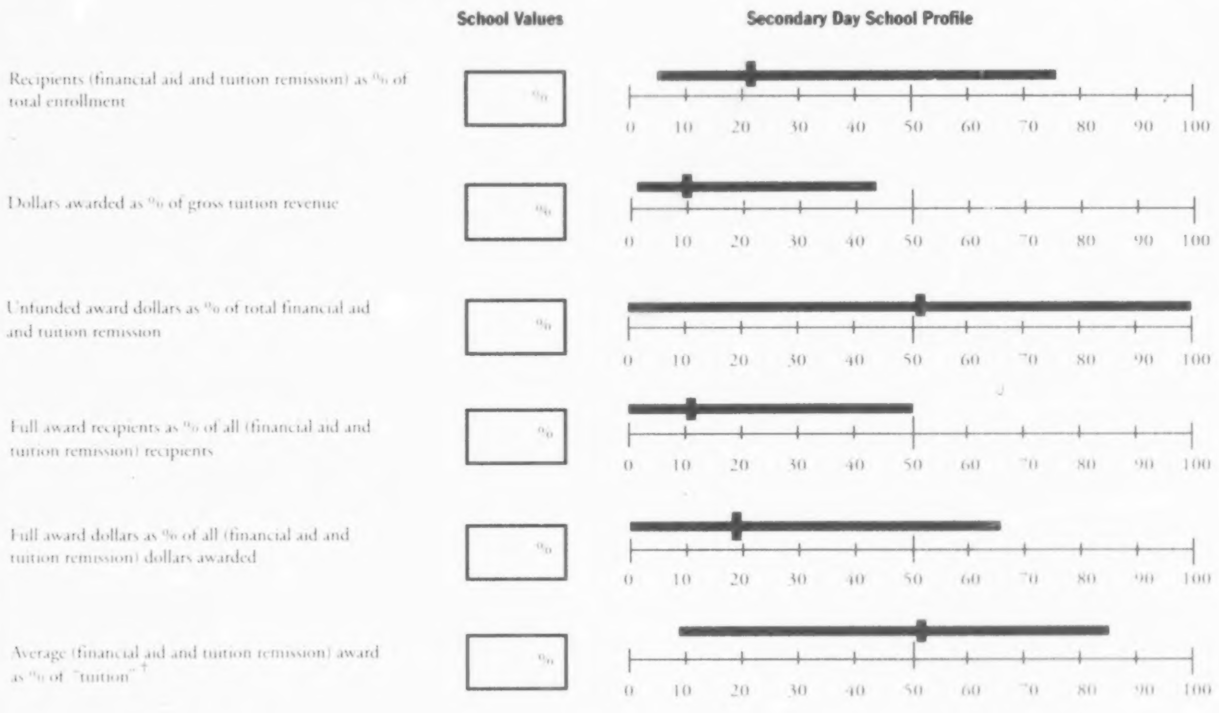


† To avoid the complexity associated with graduated tuitions, "tuition" here is calculated as gross tuition revenue/total enrollment.

Source: NAIS statistics.

Unfunded award dollars as a percentage of total financial aid and tuition remission measure the degree to which the costs of a school's financial assistance program are supported, directly or indirectly, by tuition revenue. Some schools are fortunate to have investment and/or gift income that is *restricted* in use to supporting the financial assistance program. Because of the restriction, such income is available only for financial assistance and may not be used to meet other operating expenses. Therefore, no potential exists to reduce tuitions by discontinuing that part of the financial assistance program supported from restricted income and reallocating the restricted income elsewhere. By contrast, *unrestricted* investment or gift income applied to financial assistance is income that *could* be applied to meeting other operating expenses. The choice to apply it to financial assistance therefore represents an indirect charge against everyone's tuitions. Or, put another way, tuitions could be reduced if that part of the financial assistance program supported by unrestricted investment or gift income were to be reduced. *Tuition discount* measures foregone tuition revenue not offset by restricted investment and gift income. Using the example in the previous paragraph, suppose that the school has $80,000 in investment and gift income restricted for financial assistance. Thus 25 percent of its financial assistance expense is sup-

Figure 23 Financial Aid and Tuition Remission Analysis



[†] To avoid the complexity associated with graduated tuitions, "tuition" here is calculated as gross tuition revenue/total enrollment.

Source: NAIS statistics.

ported by restricted income. Seventy-five percent, or $240,000, is unfunded. The *tuition discount* is 7.5 percent ($240,000 in unfunded financial assistance as a percentage of $3.2 million in gross tuition revenue).[†]

There are special reasons for looking at the number of full-award recipients as a percentage of all recipients, at the dollar amount of full awards as a percentage of the dollar amount of all awards, and at the average award as a percentage of a school's tuition. High ratios in all these cases point to the concentration of financial assistance dollars on a relatively small number of low-income families. Very high ratios suggest contexts in which there may be significant rich/poor polarization of the school community. Lower ratios indicate something closer to a continuum of family financial backgrounds, better representation of the middle economic class, and a greater likelihood that children from middle-income and low-income families feel comfortable in environments that are less sharply etched by affluence than in the high-ratio

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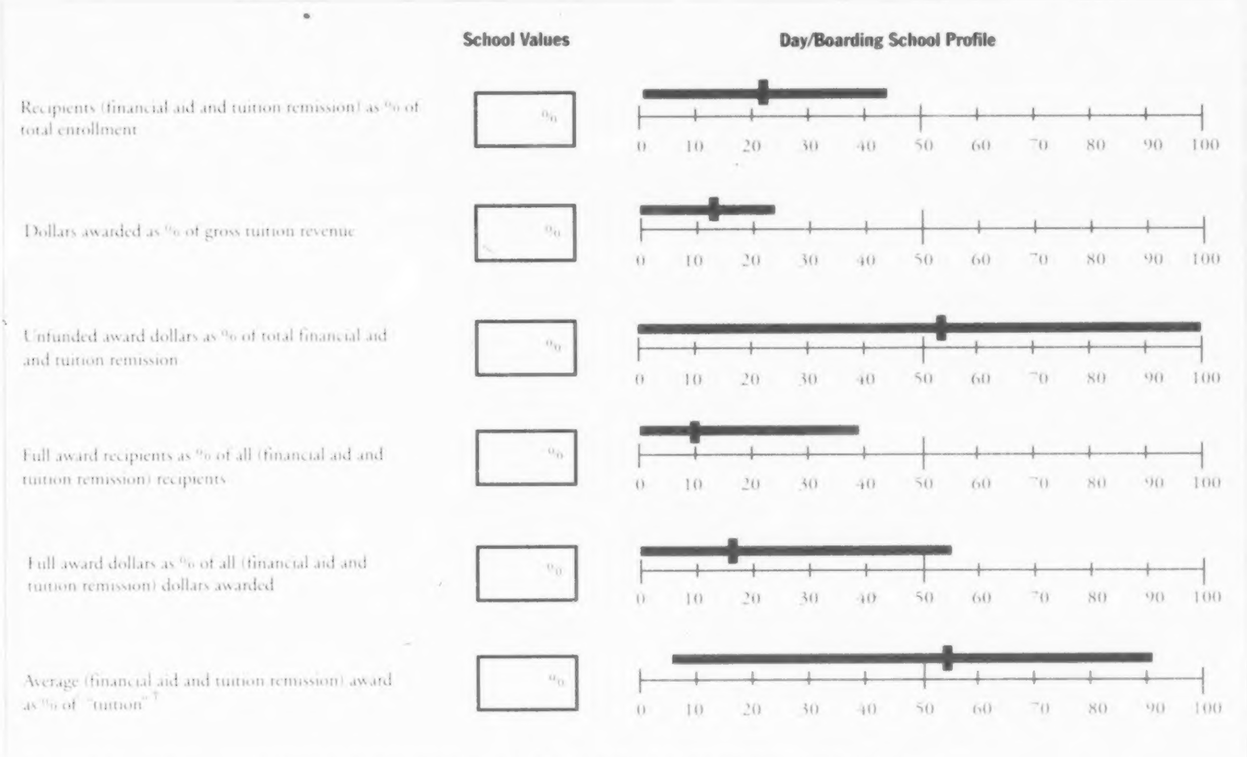
[†] Because comparatively few schools are in a position to offset substantial portions of their financial assistance expenses with restricted investment and gift income, we will use the term "tuition discount" in the remainder of this chapter to refer to the entire amount of foregone tuition revenue.

Figure 24 Financial Aid and Tuition Remission Analysis



† To avoid the complexity associated with graduated tuitions, "tuition" here is calculated as gross tuition revenue/total enrollment.

Source: NAIS statistics.

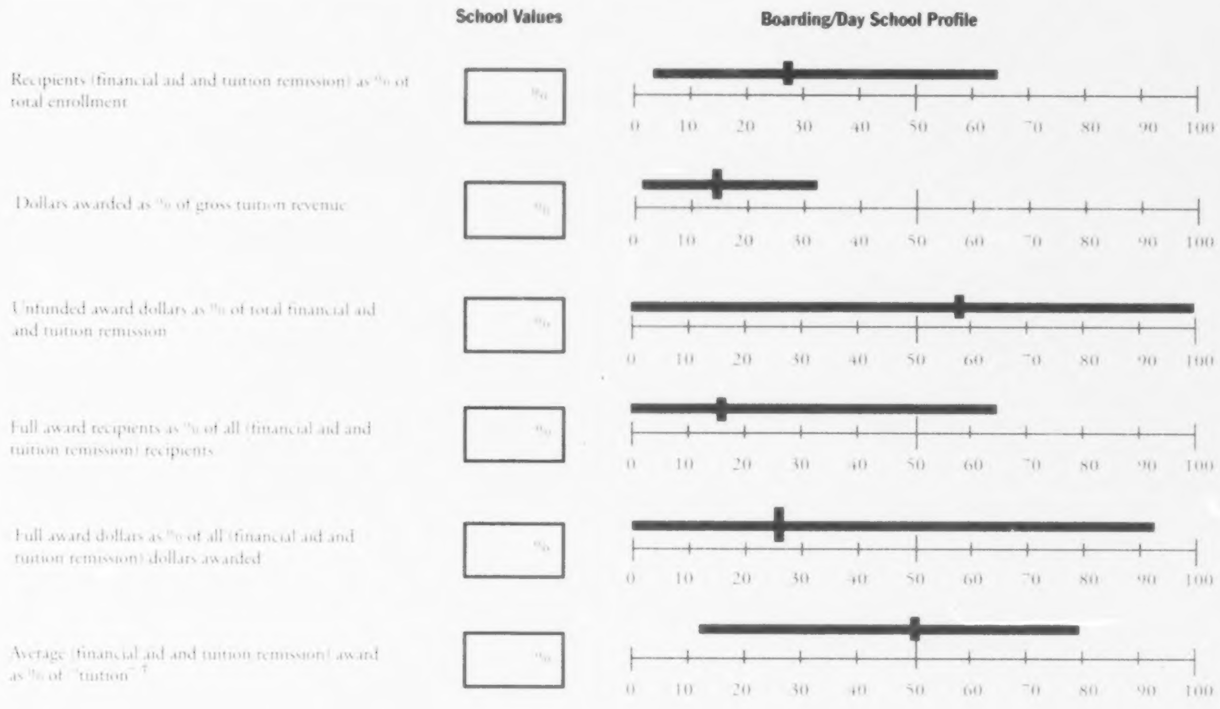
schools. Implied or explicit in the mission statements of many schools is the aspiration to a sense of school community in which children feel cherished, confident, and safe. The chances of realizing this goal for all children are almost certainly greater when socioeconomic diversity is both extensive and continuous than when it is more polarized.

Internal Analysis

THE PRESSURE ON FINANCIAL AID BUDGETS and their steadily increasing size in many independent schools make it imperative that schools analyze the allocation of their financial aid funds and the implications of trends in allocation. The following are questions your school should consider:

- What are the stated goals of the school's financial aid program?
- Do the school's financial aid practices actually achieve the stated goals of its financial aid program?
- Where are the tensions in the financial aid program? If financial aid dollars come substantially from tuition revenue, what is the impact on tuition levels? Is the school concerned about being too expensive for many families?

Figure 25 Financial Aid and Tuition Remission Analysis



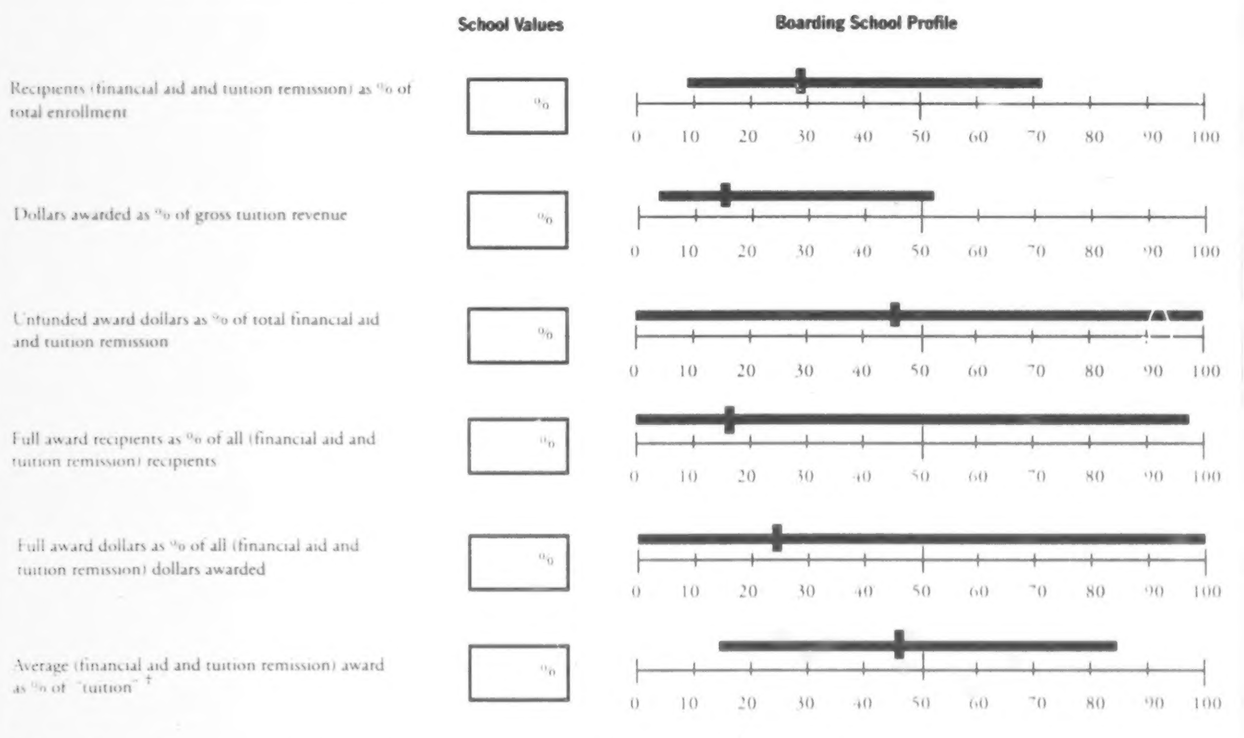
[7] To avoid the complexity associated with graduated tuitions, "tuition" here is calculated as gross tuition revenue/total enrollment.

Source: NAIS statistics.

- Is it fair to target special groups—e.g., athletes, musicians, people of color—with financial aid dollars?
- What are the implications of your school's tuition remission policy for your financial aid program?
- Has the school developed projections for the next five years of enrollment trends and financial assistance costs in relation to other operating expenses? Do such projections suggest that current practices are sustainable, and do they suggest that the school's financial assistance objectives can be met?

Table 12, entitled "Sample Financial Aid Analysis," represents one school's attempt to analyze the allocation of its need-based financial aid dollars. The chart displays information about revenue received from full-tuition-paying students at each grade level; the number of students in each grade receiving need-based financial aid and the revenue received from these students in the form of partial tuition payments, broken down into four quadrants by the size of the financial aid awards; and the dollar amount and percentage of theoretical gross tuition revenue realized at each grade level. The chart also indicates the total financial aid at each grade level, i.e., the tuition discount, both as a dollar amount and as

Figure 26 Financial Aid and Tuition Remission Analysis



† To avoid the complexity associated with graduated tuitions, "tuition" here is calculated as gross tuition revenue/total enrollment.

Source: NAIS statistics.

a percentage of theoretical gross tuition revenue. Finally, the chart shows totals for the upper, middle, and lower divisions of the school and grand totals for the whole school.

This approach allows a school to identify patterns of award allocation, to project future costs, and to investigate the impact of potential changes in the allocation of financial aid. For example, a school might consider the effect of attempting to concentrate its aid in the third quadrant or to upper school students only.

If you have appropriate software, we encourage you to re-create the "Sample Financial Aid Analysis" table on a spreadsheet so that calculations can be automated and different scenarios explored.

Administrators at the school that used this form of financial aid analysis learned:

- That a larger percentage of dollars was committed to a smaller number of students than they had realized;
- That a higher proportion of financial aid dollars was allocated to students in the lower school than they had realized or intended;
- That they needed to create more categories than the four quadrants in order to have a full understanding of the distribution of financial aid dollars;

Table 12 Sample Financial Aid Analysis

Grade	Enrollment	Tuition	Theoretical Gross Tuition Revenue†	Revenue From Full-Paying Students	Number of Financial Aid Awards and Revenue Received From Financial Aid Recipients by Quadrant								Total Revenues	Total Revenues as % of Theoretical Gross Tuition Revenue	Tuition Discount††	Tuition Discount††
					1st Quadrant Awards 0%–25% of Tuition		2nd Quadrant Awards 26%–50% of Tuition		3rd Quadrant Awards 51%–75% of Tuition		4th Quadrant Awards 76%–100% of Tuition					
		$	$	$	No.	$	No.	$	No.	$	No.	$	$	%	$	%
Upper School																
12	93	9,150	850,950	640,500	4	29,300	4	20,200	13	46,450	2	2,300	738,750	86.8	112,200	13.2
11	73	9,150	667,950	503,250	0	0	3	17,450	9	31,850	6	7,950	560,500	83.9	107,450	16.1
10	81	9,150	741,150	512,400	0	0	4	20,600	15	49,084	6	6,900	588,984	79.5	152,166	20.5
9	93	9,150	850,950	622,200	2	14,300	7	36,050	12	40,300	4	6,550	719,400	84.5	131,550	15.5
Total	340		3,111,000	2,278,350	6	43,600	18	94,300	49	167,684	18	23,700	2,607,634	83.8	503,366	16.2
Middle School																
8	74	8,150	603,100	464,550	1	7,150	5	25,150	9	23,634	2	3,300	523,784	86.8	79,316	13.2
7	64	8,150	521,600	423,800	2	12,500	2	8,640	4	11,550	4	2,600	459,090	88.0	62,510	12.0
6	53	8,150	431,950	383,050	3	20,950	0	0	1	3,150	2	1,800	408,950	94.7	23,000	5.3
Total	191		1,556,650	1,271,400	6	40,600	7	33,790	14	38,334	8	7,700	1,391,824	89.4	164,826	10.6
Lower School																
5	46	7,200	331,200	288,000	1	5,867	2	7,740	2	5,200	1	1,450	308,257	93.1	22,943	6.9
4	48	7,200	345,600	295,200	2	12,067	4	19,100	1	2,700	0	0	329,067	95.2	16,533	4.8
3	46	6,400	294,400	256,000	1	5,400	0	0	2	4,740	3	2,784	268,924	91.3	25,476	8.7
2	45	6,400	288,000	262,400	1	5,900	3	11,000	0	0	0	0	279,300	97.0	8,700	3.0
1	44	6,400	281,600	249,600	1	5,400	1	3,400	1	2,000	2	1,500	261,900	93.0	19,700	7.0
K	45	6,100	274,500	237,900	1	4,767	3	10,300	2	4,200	0	0	257,167	93.7	17,333	6.3
PS	0	6,100	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	274		1,815,300	1,589,100	7	39,401	13	51,540	8	18,840	6	5,734	1,704,615	93.9	110,685	6.1
Whole School																
Total	805		6,482,950	5,138,850	19	123,601	38	179,630	71	224,858	32	37,134	5,704,073	88.0	778,877	12.0

† Revenue if every student pays full tuition.

†† Excluding amount offset by restricted investment and gift income.

- That they needed to do such an analysis on a regular basis, since several commonly held assumptions influencing the financial aid program had proved to be inaccurate.

Theoretical Analysis and Policy Options

YOU WILL RECALL that there are three forms of financial assistance: need-based financial aid, tuition remission, and no-need awards. The following theoretical treatment can be applied to any of these separately or to any combination of them.

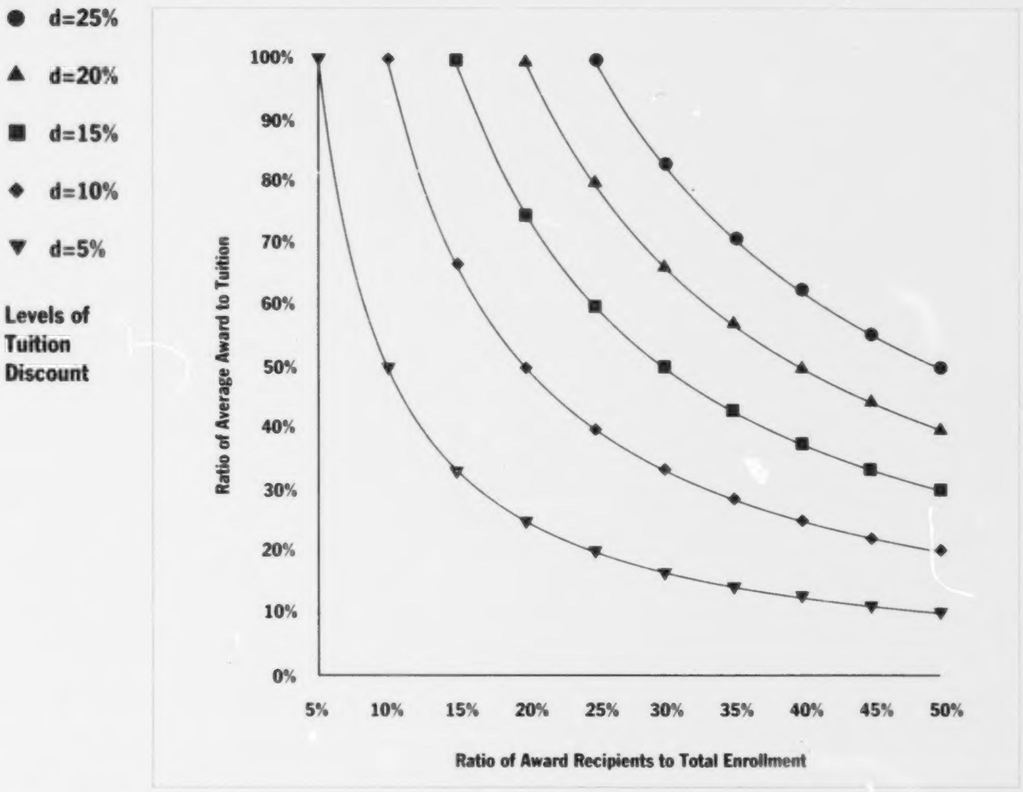
Even without varying its budget for financial assistance, a school has wide latitude for policies and decisions covering the amounts and the distribution of financial assistance awards. As an illustration, consider two schools, each with tuitions of $10,000, enrollments of 250, and financial assistance budgets of $250,000. One of these schools might make 100 awards of average size $2,500. The other might make 25 awards of average size $10,000. The two schools may have very different policies with regard to the goals of their financial assistance programs. They may also be operating in very different demographic and market contexts. For a combination of reasons—some policy-related and some based on external circumstances—each school elects to forego a portion of its theoretical gross tuition revenue as a tuition discount. In one school, the proportion of the student body on some form of financial assistance is 40 percent. In the other, it is 10 percent.

A mathematical treatment of the relationship between tuition discount, average financial assistance award, and the proportion of students receiving some form of financial assistance is given at the end of this section.

Figures 27–29, entitled "Financial Assistance Relationships," show the inverse relationship between the ratio of average financial assistance award to tuition and the percentage of students receiving assistance, for five different levels of tuition discount (d=5 percent to d=25 percent). They help to indicate the effects of potential financial aid policy changes. Several examples are illustrated in the charts. In Figure 28, while keeping the tuition discount at 10 percent (by going from one point to another *on the same curve*), reducing the ratio of award/tuition from 50 to 25 percent permits an increase in the number of award recipients as a percentage of total enrollment from 20 to 40 percent. The example illustrated in Figure 29 combines the effects of a reduction in tuition discount from 15 to 10 percent and a reduction in the ratio of average award/tuition from 50 to 25 percent. The results are a cost saving equal to 5 percent of gross tuition revenue and an increase in the proportion of aid recipients from 30 to 40 percent.

To locate your school's position on the chart and begin to consider financial assistance policy options with the help of the chart, you need two numbers calculated for the most recent year for which you have data for your school. These are (a) the number of award recipients as a fraction of total enrollment and (b) the size of the average award as a percentage of your school's tuition. These are the first and sixth items in the comparative financial aid and tuition remission analyses (Figures 21–26). Remember that these comparative analyses encompass both need-based financial aid and tuition remission.

Figure 27 Financial Assistance Relationships

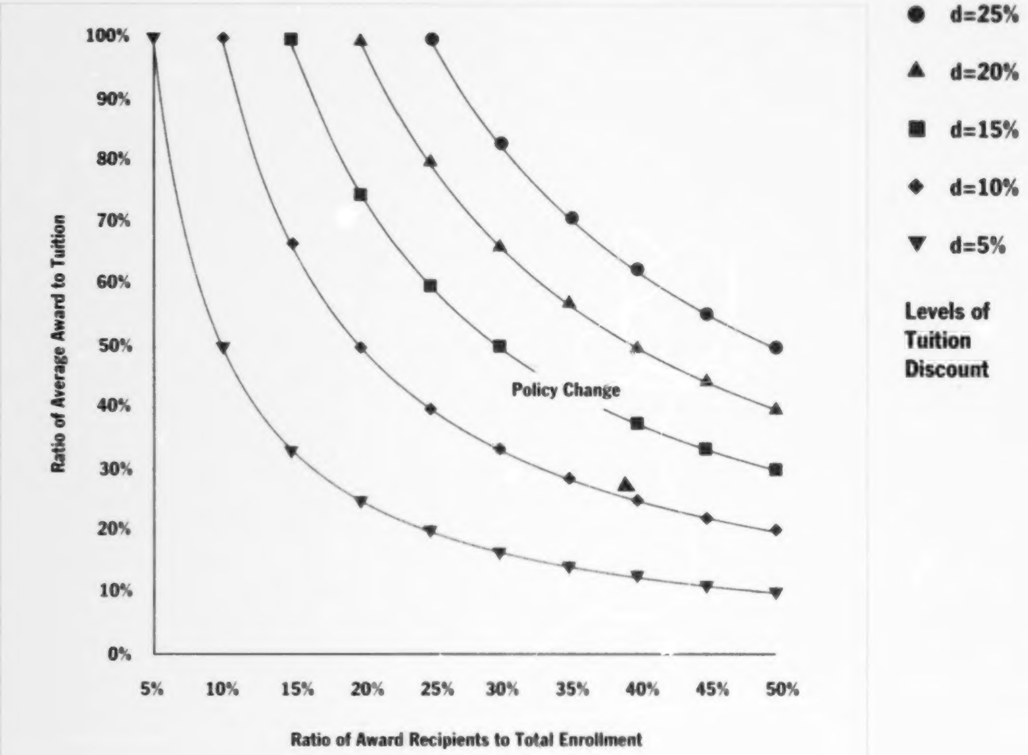


Once you have located your school's position on the chart, try to get a feeling for the policy and financial implications of moving in different directions on the chart. For example, moving diagonally upward and to the right involves higher levels of tuition discount and lower levels of net tuition revenue (except where the discount is fully funded): the ratios of both average award to tuition and award recipients to total enrollment increase. Horizontal movement to the right achieves an increase in the ratio of award recipients to total enrollment while keeping constant the ratio of average award to tuition: tuition discount increases. Horizontal movement to the left achieves the opposite effect. Diagonal movement downward and to the left involves decreasing tuition discount (increasing net tuition revenue): the ratios of both average award to tuition and award recipients to total enrollment decrease.

This chart is not time sensitive. In other words, you can use data from different years to enter your school's position on the chart and thereby track or monitor its status in relation to financial assistance policy for a period of successive years. Has the movement been deliberate, planned, foreseen—or accidental? What are the implications? In what direction and at what pace should future movement be planned in order to achieve the school's strategic goals for financial aid and tuition remission?

Finally, a mathematical note. Tuition and tuition discount, average award, and the proportion of total enrollment receiving some form of financial assistance are related as follows:

Figure 28 Financial Assistance Relationships



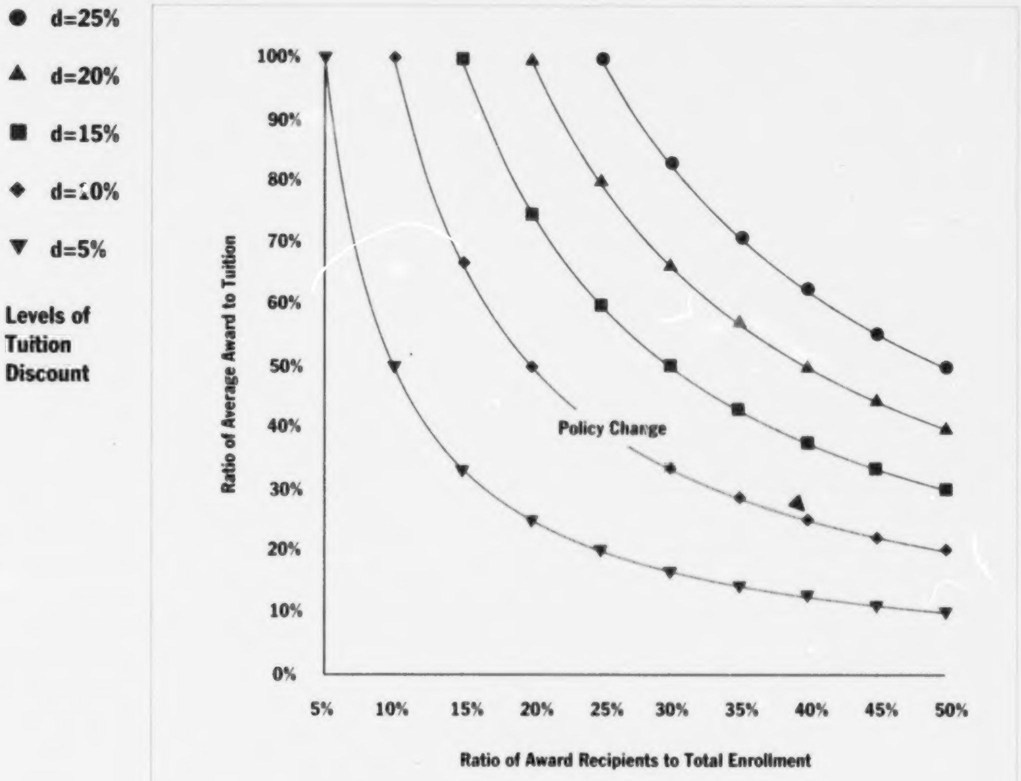
Policy Change	From	To
Tuition discount	10%	10%
Average award/tuition	50%	25%
Award recients/total enrollment	20%	40%

Total award recipients = r
Total award dollars = A
Total enrollment = E
Tuition = T
Average award = $a = A/r$
Tuition discount = $d = A/(E \bullet T)$

$$= \frac{a}{T} \bullet \frac{r}{E}$$

For a given level of tuition discount, the ratio of average award to tuition is inversely proportional to the ratio of aid recipients to total enrollment. Or, put another way, a school that wishes to keep its financial assistance budget constant in relation to gross tuition revenue can still double the proportion of award recipients to total enrollment by halving the size of the average award. Note that this calculation assumes a sufficient number of applicants to the school who can afford the higher partial tuition payments required by the lower level of awards.

Figure 29 Financial Assistance Relationships



Policy Change	From	To
Tuition discount	15%	10%
Average award/tuition	50%	25%
Award recients/total enrollment	30%	40%

Conclusion

IN THIS CHAPTER, WE HAVE DESCRIBED MEASURES OF ACCESS AND AFFORDability and explored the implications of applying them to recent trends in independent school tuitions, family finances, financial aid, and tuition remission. The evidence points to the likelihood of an imminent ceiling or plateau of resistance with regard to the number of financial assistance recipients as a percentage of total independent school enrollment. It also indicates that independent school tuitions are affordable by a small and diminishing proportion of U.S. families. The aggregate annual cost of financial assistance programs, more than a third of a billion dollars, now amounts to 10 percent of the total operating expenses of independent schools. Collectively, independent schools are discounting nearly one-seventh of their gross tuition revenues. Recent annual rates of increase in both these figures substantially outpace the rate of increase in the number of financial assistance recipients as a proportion of total enrollment. Current trends yield projections that are not sustainable.

We have noted that financial aid is a policy orphan in typical independent school administrative structures, often being a secondary responsibility of a busy administrator who already has demanding primary assignments. In view of the large amounts of money and the substantial proportion of total operating expenses involved, we have recommended that schools review and, if necessary, develop strategic goals for financial assistance. These can include objectives for the number of financial assistance recipients as a proportion of total enrollment; for the average size and distribution, by amount and grade level, of financial assistance awards; for projected levels of tuition and tuition discount; and for determining the proper policy basis for tuition remission programs (benefit or need-based financial aid).

Finally, we have offered several analytical techniques for schools to use as they study their own programs and develop strategic goals.

VI

Class Size and Individual Attention: Reexamining Articles of Faith

Peter Aitken
Vivian Anthony
William Keator
Ann Tottenham

INTRODUCTION

PARENTS OFTEN EXPLAIN WHY THEY SEND THEIR CHILDREN TO INDEPENDENT schools by referring to "small classes and individual attention." It seems likely that this perception embodies some of the "added value" for which parents are prepared to pay substantial tuitions at independent schools. At one level, we should be glad that parents perceive distinguishing features of independent schools and are prepared to pay for them. This is testimony both to our success in running distinctive institutions that continue to command a share of the market and to our effectiveness in communicating the virtues of these institutions. Parents are in fact telling us what we've always told them:

> Classes at XYZ School are small, and students have many opportunities to work individually or in small groups with teachers outside of regular class hours. Each student is assigned to a faculty Advisor who meets regularly with the student, follows his or her progress during the year, and communicates frequently with parents. Especially in times of academic or personal difficulty, the faculty Advisor is an important source of guidance and support for the student. It is a hallmark of XYZ that close and lasting relationships develop between students and faculty...

Like much catalogue prose, this is persuasive rhetoric. Parents want to feel that their children are visible and known, that their progress is carefully followed, that they will have opportunities to collaborate with adults both in and out of classes, and that an effective safety net will function for them in times of difficulty. They want to know that people whom they trust and respect will be paying attention to their child—individual attention. And they want to know that they, themselves, will be kept informed about what's going on. Schools that promise and deliver on these commitments build good reputations, attract growing numbers of families, and succeed.

Individual attention is the heart of the matter. Independent schools believe in it. Parents will pay for it. And it works.

Because teachers' salaries and benefits are a major factor in most schools' expenses and because tuitions and fees contribute the greater part of their revenues, student-teacher ratio and therefore class size are central to the issue of affordability. Long-term efforts both to enhance access to independent schools and to improve teachers' compensation will put upward pressure on student-teacher ratios and average class sizes. Can we seriously consider significant changes in these features of independent schools without threatening the very qualities that are widely believed to have distinguished our institutions and to have accounted for so much of their success? The Research Group of the Project on Pricing and Affordability struggled long and hard with this question, eventually reformulating it in two ways. First, what may be the price of failing to consider such changes? Second, are there unexamined assumptions that may be standing in the way of imaginative approaches to change? The first of these questions was addressed in chapter I, where we suggested that declining affordability and increasing political marginalization of independent schools would ultimately be unacceptably high prices to pay for failure to engage the issues of costs and access. The second question is the subject of the current chapter.

Specifically, the unexamined assumption on which we intend to focus is the assumption that small classes are the key to individual attention. In the language of our own marketing and promotion efforts, we in the independent school community have probably been the most effective proponents of an association between "small classes" and "individual attention." We phrase it as a unified concept, and parents intone the phrase back to us. But have we really stopped to think about just what "individual attention" means and about just how it is that small classes contribute to it? In this chapter we argue that small class size is only one of a number of factors underpinning the individual attention for which parents of children in independent schools pay a premium. We also suggest that small class size may not be the most important of such factors. In promoting a reassessment of this hitherto largely unexamined assumption that small classes are the major determinant of individual attention, we believe that there is potential for both cost reductions and salary increases without a threat to the distinctiveness that continues to attract parents to independent schools.

We begin with a brief comparative overview of class sizes in U.S. independent and public schools and in independent schools in several foreign countries. We review what the research literature has to say about the relationship between class size and academic achievement. We discuss characteristics of independent schools that we believe may contribute more significantly than class size does to individual attention. And we conclude by offering quantitative models for schools to use in analyzing their own practices and potential for change.

Class Size: An Overview

To begin with, let's be sure we distinguish clearly between class size and student-teacher ratio. Student-teacher ratio means the total number of students in a school, or division of a school, divided by the total (full-time equivalent) number of teachers. For example, a school with 450 students and a faculty of 40 full-time and 10 half-time teachers has a student-teacher ratio of 10:1.

Average class size is the average size of the groups or sections to which students are assigned for instruction. Information on average class size is less reliable than that on student-teacher ratio because of the variety of different organizational arrangements for teaching that are used among schools and even within individual schools. For example, classes in the elementary grades may have two or more teachers or combinations of teachers and teachers' aides. At the upper grade levels, team teaching formats may be used in which large groups of students attend lectures in some of their scheduled class periods and meet in smaller groups with individual teachers in other periods. Independent projects and a variety of other arrangements further complicate the task of defining average class size in such a way that reliable comparative data can be obtained from schools. But it is reasonable to generalize as follows. Because, especially at upper grade levels, teachers are usually scheduled more lightly than students are, average class size (i.e., the average number of students per class) is typically higher than the student-teacher ratio (average number of students per teacher).

U.S. Schools

NAIS SURVEYS HAVE TRADITIONALLY CONCENTRATED on gathering student-teacher ratio data rather than average class size data. However, beginning with the 1992 fall survey, NAIS is gathering class size data on an experimental basis for several years. The survey instructions request that schools "provide the average number of students for regular classes or sections in each of the grade ranges shown." Median values of reported average class sizes in three grade ranges, K–5, 6–8, and 9–12, are indicated in Figures 9–14 in chapter III for six different categories of schools. Also indicated are extreme, or "outlier," values—the 10 highest and the 10 lowest values in each school category and grade range.

Analysis of the fall 1992 data indicates that median values for average class size lie between 15 and 18 in day and day-boarding schools, and between 10 and 12 in boarding-day and boarding schools. Average class sizes tend to be smaller at the upper grade levels than at the lower grade levels.

It seems possible that some of the highest of the high-side outlier values for class size may have resulted from misinterpretation of the survey question. But the lower high-side outlier values are plausible. At most grade levels and in most categories, there are schools that report average class sizes of 25.

Low-side outlier values are between 5 and 10 in most cases. Average class sizes as low as this probably have greater implications in financial operations analysis than in a discussion of the effectiveness of teaching and learning, because on any general level they represent an unrealistic model.

For reasons that are probably similar to those cited above, reliable data on average class size in public schools are not available. The student-teacher ratio for grades K through 12 in U.S. public schools is approximately 17:1 and for NAIS schools approximately 10:1. If one assumes similar patterns of student and teacher scheduling, this suggests that average class size in public schools is about 1.7 times the average class size in NAIS schools. Allowing for the possibility that public school teachers have heavier schedules than independent school teachers, then average class size for grades K through 12 in public schools may be closer to 22 to 27, or 1.5 times the NAIS range for day schools.

English Schools

AT THE SECONDARY LEVEL, the student-teacher ratio in English independent schools is 11:1, and in state schools it is 17:1. Boarding schools in the Headmasters' Conference have a ratio of 8:1, but the ratio in independent day schools is nearer 14:1. These figures are all very close to the corresponding ones for U.S. schools. When it comes to class size, though, substantial differences between English and American schools are evident.

Classes in the highly academic independent day schools in England are often as large as 30 students until the end of 10th grade, though in boarding schools classes seldom exceed 20 students. At grades 11 and 12, classes in most state and independent schools have between 10 and 15 students. Very large classes—sometimes over 40—exist in state primary schools, but the average size of classes in grades K through 5 is 26. In independent schools, groups of 12 to 15 at kindergarten and 20 to 24 at grades 2 through 5 are the norm.

Canadian Schools

CANADIAN SCHOOLS ADVERTISE "small class size and individual attention," but the definition of "small" varies. In both the public and independent systems, classes in the primary grades are typically 20 students or fewer. At the middle and upper school levels, class sizes in public schools and in independent day schools are larger. Class sizes in the junior and senior high school grades in independent day schools are characteristically between 20 and 25 students. In independent boarding schools, where teachers have heavier burdens of coaching and evening supervision, classes are usually between 15 and 20 students.

In public junior and senior high schools, classes are between 30 and 35 students.

RESEARCH ON CLASS SIZE AND ACADEMIC ACHIEVEMENT

MOST CLASS SIZE RESEARCH FOCUSES ON A NARROW DEFINITION OF achievement measured through standardized tests, such as the Stanford Achievement Test, or through tests created by researchers for specific research projects. There are two primary reasons for this focus. First, measuring the influence on achievement of a variety of factors, including class size, parents, teachers, peers, school environment, and community, is nearly impossible. Second, and perhaps more importantly, most research focuses on public schools, where reductions in class size are subject to the approval of school boards and/or state legislatures. Research influences the votes. Test scores are among the most effective means of stating an educational case to politicians. Now, academic achievement means a great deal more than test scores and, moreover, is probably only one of a number of factors that many independent schools consider in determining class sizes. Unfortunately, the political and financial dimensions of the class size issue have often overshadowed its broader educational dimensions in the public sector, with the result that the research literature concentrates on test scores. All the same, because of the significance of the class size issue in our work on affordability and access, we include here an overview of what can be learned from research studies on class size and academic achievement.

Interest in the link between class size and academic achievement dates back to the turn of the century, and the research literature is extensive. Beginning in the late 1970s, class size became the subject of a heated scholarly dispute. In a review of research on class size, Glass and Smith (1978) concluded that large reductions in class size have a significant impact on achievement. Robinson and Wittebols (1986) of the Educational Research Service (ERS) reported positive achievement effects associated with class size reductions for grades K–3, but suggested that evidence of possible benefits beyond the third grade was inconclusive. Robert Slavin (1989, 1990) challenged the conclusions in both studies, reporting no significant achievement benefits associated with reductions in class size until a tutoring ratio of one teacher to one student was reached. More recently, Tennessee's Project STAR and Indiana's PRIME TIME experiment have sought to generate more definitive conclusions. The Glass and Smith and Robinson and Wittebols studies remain the most widely known recent sources of reference.

Glass and Smith undertook a meta-analysis of the class size literature. Meta-analysis is a statistical technique used to summarize the results of a number of independent studies. From a total of 300 studies, Glass and Smith selected 77; however, they themselves explained that only 14 of these used carefully controlled experimental methods. From results reported in these 14 studies, Glass and Smith deduced a relationship between class size and achievement and drew the conclusion that "large reductions in school class size promise learning benefits of a magnitude commonly believed not within the power of educators to achieve." According to Glass and Smith, reductions in class size begin to produce significant achievement results when class size falls below 20 pupils. As class size is reduced below 15, the effect becomes dramatic.

Robinson and Wittebols questioned the methodology and refuted the findings of the Glass and Smith study. Among the criticisms articulated by Robinson and Wittebols were the following. The Glass and Smith findings rested to a large degree on only four of the 14 "well-controlled" studies they selected. Seventy-three percent of the comparisons from which Glass and Smith derived their class size/achievement relationship came from just four studies. In addition, 8 of the 14 selected studies dealt with instructional conditions not typical to public schools (i.e., college classes or tutoring situations). Glass and Smith were criticized for statistically homogenizing the findings of research studies in such a way as to lose helpful information containing subtle but important clues.

Robinson and Wittebols undertook their own study by performing a technique called related cluster analysis on all class size studies done between 1950 and 1985 on classes in the K–12 grade range with 5 or more students. Related cluster analysis attempts to gather research in a particular area and break it down into groups that address specific issues or problems. For example, one cluster deals with class size studies relating only to grades 6–8. Robinson concludes that "the most positive effects of small classes on pupil learning occur in grades K–3 in reading and mathematics, particularly in classes of 22 or fewer students. However, the first year's positive effects may not be sustained in subsequent years [a conclusion that is corroborated by observations from Project STAR]. Studies examining student attitudes and behavior found the most favorable effects of smaller classes in the elementary grades. Smaller classes can positively affect the academic achievement of economically disadvantaged and ethnic minority students.... The positive effects of class size on student achievement decrease as grade levels increase." (Robinson, 1990)

Slavin refutes both the Glass and Smith and Robinson and Wittebols findings, claiming that the only significant achievement effects are attained in one-on-one tutoring contexts. He points out that, while evidence for positive class size effects is strongest in the Robinson and Wittebols K–3 cluster, it comes from only 50 percent of the studies in the cluster. In addition, he notes that studies were included in the cluster regardless of the magnitudes of the class size effects they reported. In his critique of Glass, Slavin notes that 2 of the 14 key studies have total treatment times of just 30 minutes, and that 3 use post-secondary school samples. One of these post-secondary studies, the one that in fact accounted for the greatest class-size effect in Glass and Smith's data, was a study of improved performance in hitting a tennis ball against a wall for 30 seconds. Using Glass and Smith's data for the remaining studies, Slavin demonstrates that one-on-one tutoring is the only effective means of influencing achievement.

In a 1989 article, Tomlinson notes:

> "Since 1900, average class size [in American public schools] has actually fallen from 37 pupils per teacher to the present ratio of 18 to 1. In 1964, the year test scores peaked and the great test score decline started—a phenomenon observed practically everywhere, in virtually all tests of aptitude and achievement, and among students of all backgrounds and grade levels—average class size was larger than when scores hit the bottom of their slide 15 years later. Class size has continued to decline. In fact, average class size has never been smaller than it is today." (Tomlinson, 1989)

Tomlinson's findings strongly suggest that other factors are at work in determining student achievement and that class size, though evident and easily measurable, may be an inappropriate focus of attention.

Mortimore and Blatchford of London University's Institute of Education write:

> "It is somewhat paradoxical that the youngest pupils in the system—the infants who are least able to act independently and, therefore, must depend on adult help—usually experience some of the largest class sizes. As these pupils progress upwards and become more independent, their class size is often reduced until—as young adults and potentially autonomous learners—they are taught in the smallest groups that they have experienced. Current sixth form groups are even smaller than many groups in higher education.... What is seldom included in official tables, however, is any information on the number or role of people other than teachers (e.g., assistants and parent volunteers) present in classrooms. In these circumstances, the official size of the class may provide only a partial—although important—view of the opportunities for pupils to interact with adults." (Mortimore and Blatchford, 1993)

Additional insights into the class size issue are offered by Deborah Kazal-Thresher in an article reporting on a conversation with Ronald Ferguson, who undertook a large-scale study of 900 school districts in Texas.

> "Ferguson...looked at class size to determine when and where the teacher-student ratio either harmed or helped student performance.... He found that class size is important for student performance at the primary grade level. Using a measure of class size that was constructed from the number of students per teacher in the district, he found that reducing the number of students per teacher improved student outcomes when the ratio exceeded 18:1. (Because of the way the student-teacher ratios were derived, this really translates into a class size of 22 or 23 to 1.) Each additional student over 18 [i.e., over a class size of 22 or 23] caused average district reading scores to fall by between one-tenth and one-fifth of a standard deviation...for grades 1 through 7.... Ferguson concludes that 'there is now fairly strong evidence that actual class sizes that are larger than 23 do significantly reduce student achievement, particularly in the elementary grades.'" (Kazal-Thresher, 1993)

Gerald Bracey offers another perspective on the Ferguson research.

> "Ferguson observed...that smaller class sizes were associated with higher test scores. But smaller classes also cost more.... Interestingly, Ferguson's analyses found a "threshold" class size of 18, below which size did not matter.... Ferguson argues that there is no additional benefit for classes of fewer than 18 pupils." (Bracey, 1993)

Again, because of the way in which Ferguson constructed class size ratios from student-teacher ratios, this "threshold" level of 18 is equivalent to actual class sizes of 22 or 23.

Ferguson reported that about one-third of the variation in students' test scores could be accounted for by the quality of their teachers as measured by teachers' test scores. Additionally, he found that teachers' experience contributed positively to the level of pupil achievement. This research reassuringly supports common sense and intuition, both of which suggest that teachers' competence and experience contribute to how well their students learn.

Several themes emerge from the class size research. Evidence of a link between class size and student achievement is stronger at the elementary grade levels than at the upper grade levels. Many schools have larger elementary level classes and smaller upper level classes, an arrangement that appears to disregard the research unless the larger elementary level classes have more than one teacher. Reducing class size is especially beneficial to economically disadvantaged and ethnic minority children. A number of studies point to the existence of a "threshold" for class size somewhere between 15 and 23 students. Evidence is contradictory and inconclusive about the meaning of this threshold: some studies suggest that significant improvement in student achievement can be accomplished by reducing class sizes below the threshold, while others report that class size reductions below the threshold have little or no effect.

Having suggested that average class size may not be the key to student achievement and that a variety of other human and organizational factors appear significant, we now turn our attention to the subject of individual attention and, in particular, to exploring the widely expressed belief that small classes are a necessary and significant determinant of individual attention.

INDIVIDUAL ATTENTION

PARENTS VALUE "INDIVIDUAL ATTENTION" AND SAY THAT IT IS ONE OF THE main reasons why they enroll their children in independent schools. How do parents gauge whether or not their children are receiving individual attention? Parents' own direct experiences include a variety of interactions with teachers, administrators, and others—face to face, by telephone, in the school's published materials, and in personal written communications—all of which contribute to their perception of the relationship between their own children and the school. A good admission staff plays an important role until the child and the parents develop other ongoing relationships. Where schools have advisor systems, faculty advisors make it their business to get to know students and communicate formally and informally with parents about their children's progress. Reports and teacher conferences play important roles in developing parents' perceptions of how their children are seen, known, understood, and supported. Occasional contacts over disciplinary issues can contribute positively to the picture. Parents' attendance at performances, games, exhibits, shows, and other special events yields additional insights into their children's roles at school.

By their nature, classes themselves are not prominent among the factors contributing to parents' direct experiences of how well their children are known, attended to, and supported in school. Parents attend or visit classes from time to time on occasions such as parents' days, but the basis of their assessments of individual attention in the classroom is largely indirect. Typical classroom settings involve groups of 12 to 18 students with one teacher, or, particularly in the elementary grades, with a teacher and one or more assistants, aides, or volunteers. Class periods, meeting times, or time blocks are typically 45 or 50 minutes, with many variations. What does "individual attention" mean in these contexts? Is it really related to the raw mathematics of teacher time per student in the classroom—45 minutes divided by 15 students means that each student gets 3 minutes of the teacher's time? Or has it at least as much to do with what goes on outside the classroom in a large variety of ways?

We suggest that, in classrooms themselves, the difference between three minutes of teacher time per student and two minutes of teacher time per student is not very significant. On the other hand, we argue that time and possibilities for contacts between students and teachers outside of class, especially in the upper grades when students begin to have independent time in their schedules, are the primary determinants of "individual attention." The student-teacher ratio determines the overall number of teacher hours theoretically available to each student. Patterns of teacher scheduling more directly affect student access to teachers on a one-on-one basis, or individual attention.

At the elementary grade levels, where student and teacher time tends to be fully scheduled, classroom student-teacher ratios remain the primary factor. In balancing attention to individual students and to the group, teachers in the elementary grades often exhibit extraordinary skills. Our analytic treatment will focus on exploring the cost implications of different philosophical approaches to the roles of additional adults in elementary level classrooms.

Our treatment of the upper grade levels will explore the relationship between scheduled and unscheduled teacher time and its implications for cost per student, teacher compensation, and the development of student independence. Because this approach is newer and less familiar than a straightforward analysis of classroom student-teacher ratios, we outline its background further in the next two paragraphs before proceeding to develop quantitative models.

By definition, "individual attention" suggests responses to student needs at a one-on-one level. To a limited extent, good teachers are responsive to individual needs in the classroom context, though focus and momentum inexorably pull toward the needs of other students and of the group as a whole. The real key to individual attention, however, lies *outside* the classroom. It has to do with the ways in which teachers use their time both in unscheduled periods during academic hours and in time beyond the academic schedule altogether.

We believe a school's overall priorities and culture, as expressed through patterns in the use of unscheduled teacher time, are more important than average class size in sustaining a climate that fosters individual attention. Let us focus on four different kinds of activities that commonly depend on unscheduled teacher time. The first is directly curriculum-related and includes course preparation; lesson planning; grading, correcting, or reviewing students' work; and communicating formally and informally with parents via reports, comments, and conversations. The second is interaction with students at a one-on-one level or in groups of two or three. The third is interaction with students in extracurricular programs, sports, meals, trips, dormitories, and a variety of similar contexts. The fourth is administrative, organizational, and professional development work such as committee responsibilities, supervisory duties, conferences, and workshops. Depending on how a school arranges its work and deploys its teachers, substantial amounts of unscheduled teacher time may be allocated to individual students at or very close to a one-on-one level and in direct response to the expressed or identified needs of such students. In the foregoing list of activities, this would include grading, correcting, and reviewing students' work; meeting individually with students over their academic work or personal, social, and developmental issues; selected interactions in extracurricular, sports, dormitory, and similar contexts; and communication and interaction with parents. Clearly, unscheduled teacher time offers many opportunities for individual attention.

QUANTITATIVE MODELS

WE HAVE DEVELOPED TWO ANALYTIC MODELS TO HELP ILLUSTRATE relationships between key variables in the classroom student-teacher ratio context. One is designed to address organizational structures characteristic of the upper grades, where individual teachers are assigned to teach groups of students in scheduled classes. The other deals with arrangements typical of elementary grade levels, where combinations of two or more teachers, aides, apprentices, and volunteers work with groups of children.

Upper Grades

AT THE UPPER GRADE LEVELS, traditional classes, grouping a number of students in a room with a teacher, usually attempt to engage them in one or more of a small number of common activities and permit them access to one adult at a time. For certain activities—lectures, demonstrations, performances, tests, and quizzes—this format is appropriate. For other activities—tasks such as reading, research, practice writing, and problem solving, for example—the format is ill suited. Here, what works better is the combination of independent time and the potential for access to a number of teachers for help when students need it. The ways in which teachers and students at the upper middle and secondary grade levels use the unscheduled portions (so-called "free periods") of academic time and even the ways in which they use time outside the formal academic timetable represent significant potential for individual attention, yet this is less well recognized and understood by parents.

The model we have developed, using the sample data in Table 13, explores the relationships between overall student-teacher ratio (with its direct impact on per-student costs for salaries and benefits), teacher and student scheduling factors, and the ratio of unscheduled to scheduled teacher hours per student characterizing the academic program. A low ratio of unscheduled to scheduled teacher hours per student suggests that teachers are in class a lot of the time. Higher ratios of unscheduled to

Table 13 Class Size and Individual Attention Model Data

Student–Teacher Ratio	Teacher Scheduling Factor %	Student Scheduling Factor %	Average Class Size	Scheduled Teacher Hours per Student	Unscheduled Teacher Hours per Student	Ratio of Unscheduled to Scheduled Teacher Hours per Student
8	100	80	6.4	3.75	0	0
8	80	80	8	3.0	0.6	0.25
8	60	80	10.67	2.25	1.5	0.67
8	40	80	16	1.5	2.25	1.5
8	20	80	32	0.75	3.0	4.0
10	100	80	8	3.0	0	0
10	80	80	10	2.4	0.6	0.25
10	60	80	13.3	1.8	1.2	0.67
10	40	80	20	1.2	1.8	1.5
10	20	80	40	0.6	2.4	4.0
12	100	80	9.6	2.5	0	0
12	80	80	12	2.0	0.5	0.25
12	60	80	16	1.5	1.0	0.67
12	40	80	24	1.0	1.5	1.5
12	20	80	48	0.5	2.0	4.0
15	100	80	12	2.0	0	0
15	80	80	15	1.6	0.4	0.25
15	60	80	20	1.2	0.8	0.67
15	40	80	30	0.8	1.2	1.5
15	20	80	60	0.4	1.6	4.0

Although the model assumes a weekly timetable with a total of 30 hours, the choice of this number does not affect either the average class size or the ratio of unscheduled to scheduled hours.

scheduled teacher hours per student reflect academic programs in which there is greater potential for students to undertake a variety of more independent activities with a good level of access to teachers for help on an individual basis.

There are four key variables in the model. The first two are student-teacher ratio and average class size. The third and fourth are the respective scheduling factors for students and teachers. The student scheduling factor is the average proportion of the total number of periods or hours in the school's academic timetable during which a student is assigned to classes. The scheduling factor is defined similarly for teachers. The student and teacher scheduling factors interact with the student-teacher ratio to determine average class size. For example, consider a school with a student-teacher ratio of 10:1. If students are in class, on average, for two-thirds of total academic time and teachers are also in class for two-thirds of total academic time, then average class size will be 10. But if teachers are in class for only half the total academic time, the average class size rises to 13.3.

Now, as we pursue the theory that individual attention is related to overall teacher time per student rather than merely to teacher time per student in classes, we find it useful to think in terms of the ratio of unscheduled to scheduled teacher time per student. Scheduled teacher time per student gives an indication of the average student's share of total teacher time in the classroom. For example, in our school of 450 students and 45 full-time equivalent (FTE) teachers, suppose that there are 30 class periods of one hour each in the weekly timetable, the teacher scheduling factor is 60 percent, and the student scheduling factor is 80 percent. Then the total number of teacher hours in the classroom per week is 45 teachers x 30 hours x 60% = 810 teacher hours. The average individual student's share of the total teacher classroom hours is therefore 810/450, or 1.8 teacher hours. Changing the student scheduling factor by itself has no effect on this 1.8-hour figure, because any change in the number of hours students spend in class is exactly offset by the increase in average class size. Teacher classroom hours per student are determined by the length of the weekly academic timetable, the student-teacher ratio, and the teacher scheduling factor.

Now, let's look at the availability of teachers to students in unscheduled, or "free," periods. Using the same assumptions as in the previous paragraph, the total number of teacher hours available is 45 teachers x 30 hours x 40% = 540 teacher hours. The average individual student's share is 540/450, or 1.2 teacher hours. Again, the student scheduling factor by itself has no impact on this figure. Out-of-class available teacher time per student during academic hours is determined by the length of the weekly academic timetable, the student-teacher ratio, and the teacher scheduling factor.

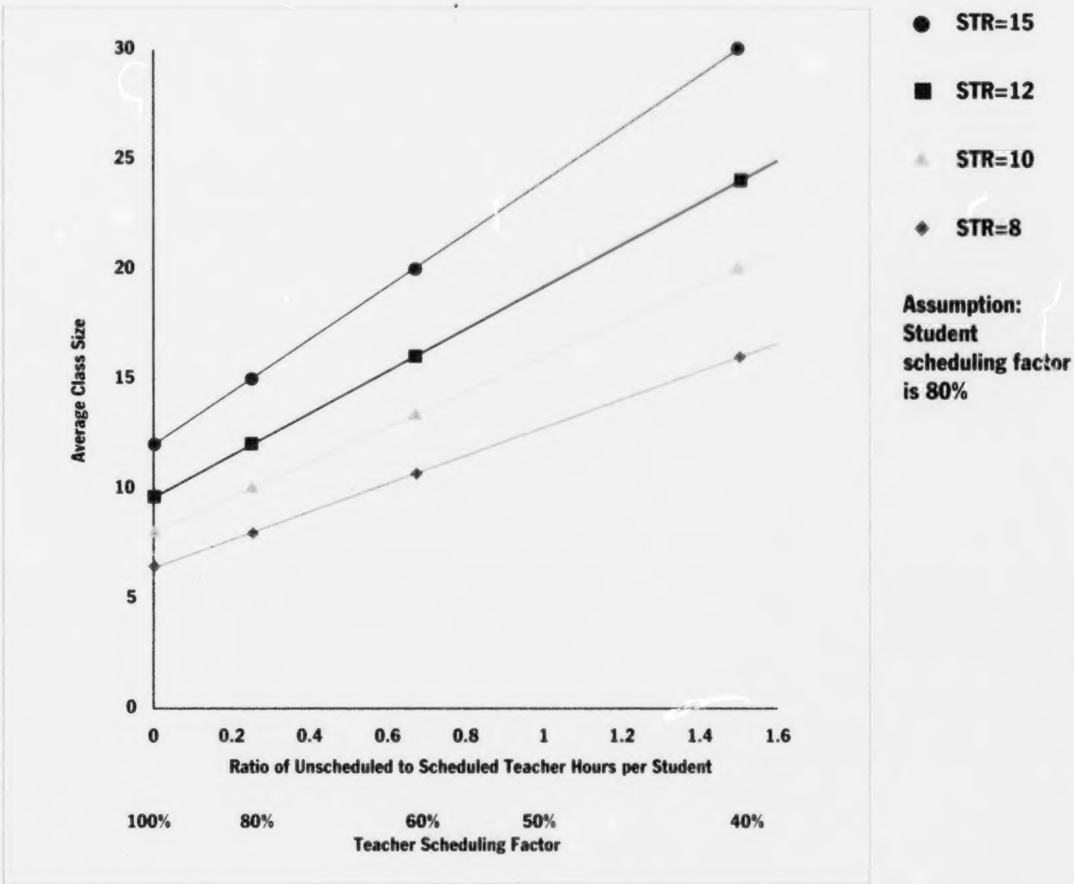
The ratio of unscheduled to scheduled teacher hours per student in this example is 1.2:1.8, or 67 percent. This ratio is determined solely by the teacher scheduling factor. It does not depend on student-teacher ratio or on the length of the weekly academic timetable.

The model data of Table 13 are plotted in Figure 30 and show the relationship between average class size and the ratio of unscheduled to scheduled teacher hours per student for student-teacher ratios of 8:1, 10:1, 12:1, and 15:1. A student scheduling factor of 80 percent is used throughout. The theoretical background of the model is explained in Figure 35, and the model can easily be recalculated for different student scheduling factors. Each sloping line on the chart represents a specific student-teacher ratio (STR). Other factors being held constant, higher student-teacher ratios lead to correspondingly higher average class sizes. Moving toward the right along any one specific sloping line represents decreasing the teacher scheduling factor while keeping the student-teacher ratio constant.

Most importantly, from the perspective of the Project on Pricing and Affordability, movement from *any* point on one of the sloping lines toward *any* point on a higher sloping line represents reduced costs via increased student-teacher ratios. It is even possible to achieve this while simultaneously holding steady or reducing average class size, though this requires large changes in teacher scheduling factor.

The model is useful in illustrating the possible range of policy options. Figures 31–34 show four policy changes as examples. The first two examples demonstrate that in-

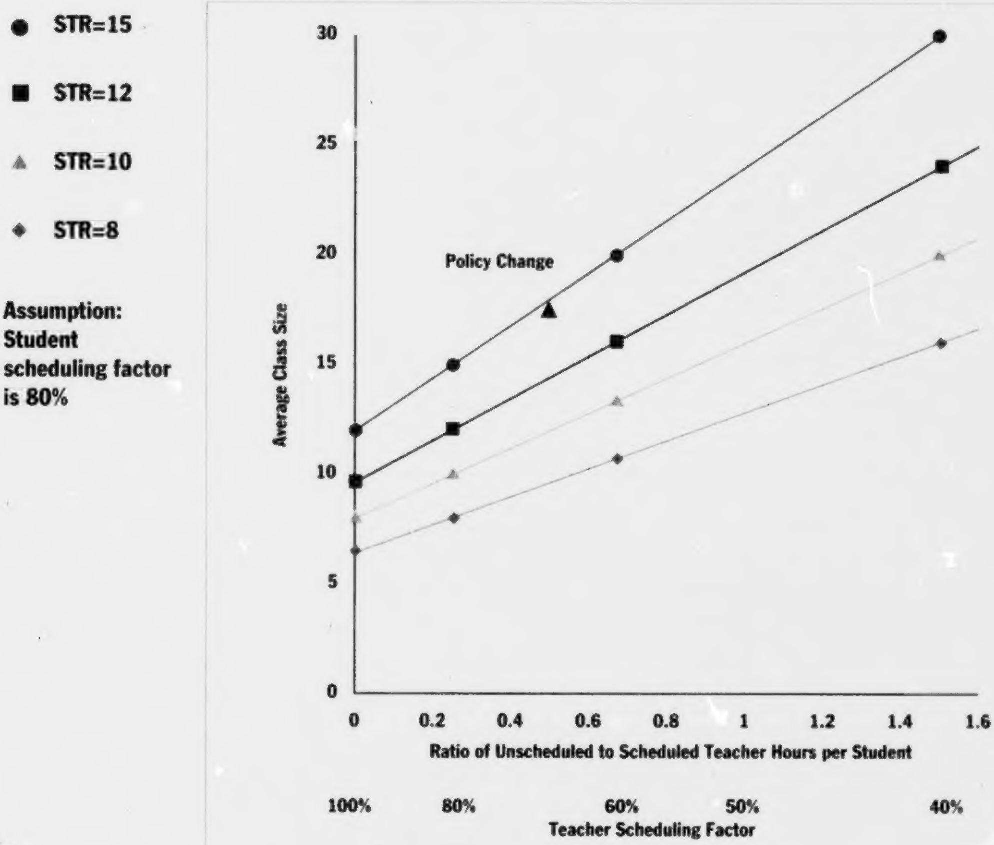
Figure 30 Teacher Scheduling Factor, Average Class Size, and Ratio of Unscheduled to Scheduled Teacher Hours per Student



creasing the student-teacher ratio while holding steady the teacher scheduling factor produces corresponding increases in average class size. The third example shows how a part of the adverse impact of such changes on average class size can be offset by an increase in teacher scheduling factor. A 50 percent increase in student-teacher ratio, with a corresponding 33.3 percent reduction in related salary costs per student, produces only a 25 percent increase in average class size. The trade-off is an increase of 20 percent in teacher scheduling factor. In the fourth example, a 20 percent increase in student-teacher ratio, with associated salary savings of about 17 percent on a per-student basis, is completely offset by a 20 percent increase in teacher scheduling factor, so that average class size remains unchanged.

In the preceding discussion, the connection between increases in student-teacher ratio and decreases in related costs for salaries and benefits has been indicated in several places. In fact there is a three-way relationship between student-teacher ratio, teachers' salaries, and cost per student. This relationship is, of course, a fundamental one in the whole context of the Project on Pricing and Affordability, where the inherent conflict between goals for enhanced access and improved teacher compensation

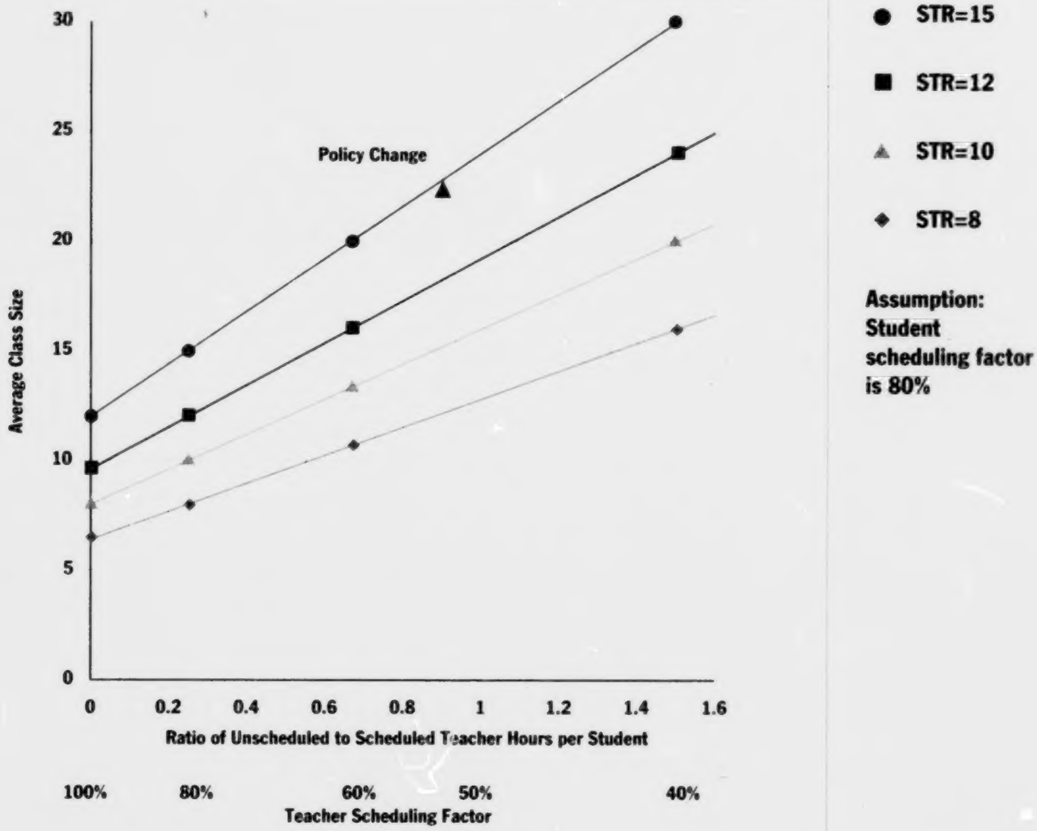
Figure 31 Teacher Scheduling Factor, Average Class Size, and Ratio of Unscheduled to Scheduled Teacher Hours per Student



Policy Change	From	To
Student–teacher ratio	10	15
Teacher scheduling factor %	70	70
Ratio of unscheduled:scheduled teacher hours per student	0.5	0.5
Average class size	12	18

was noted from the outset. Priorities and circumstances vary considerably from one school to another and even in an individual school from one time to another. Changes in student-teacher ratio have the potential to yield a mixture of cost savings for students' families and salary increases for teachers. Where to put the emphasis in this mixture is very much a decision for individual schools. Our perspective is that, since the working lives of teachers stand to be significantly affected by changes in student-teacher ratio aimed at enhancing access to independent schools, teachers themselves must be involved in planning and committed to implementing such changes. It seems appropriate that some portion of the cost savings achieved through increases in student-teacher ratio be allocated to increases in teachers' compensation, with the remainder going to reductions in tuitions.

Figure 32 Teacher Scheduling Factor, Average Class Size, and Ratio of Unscheduled to Scheduled Teacher Hours per Student



Assumption: Student scheduling factor is 80%

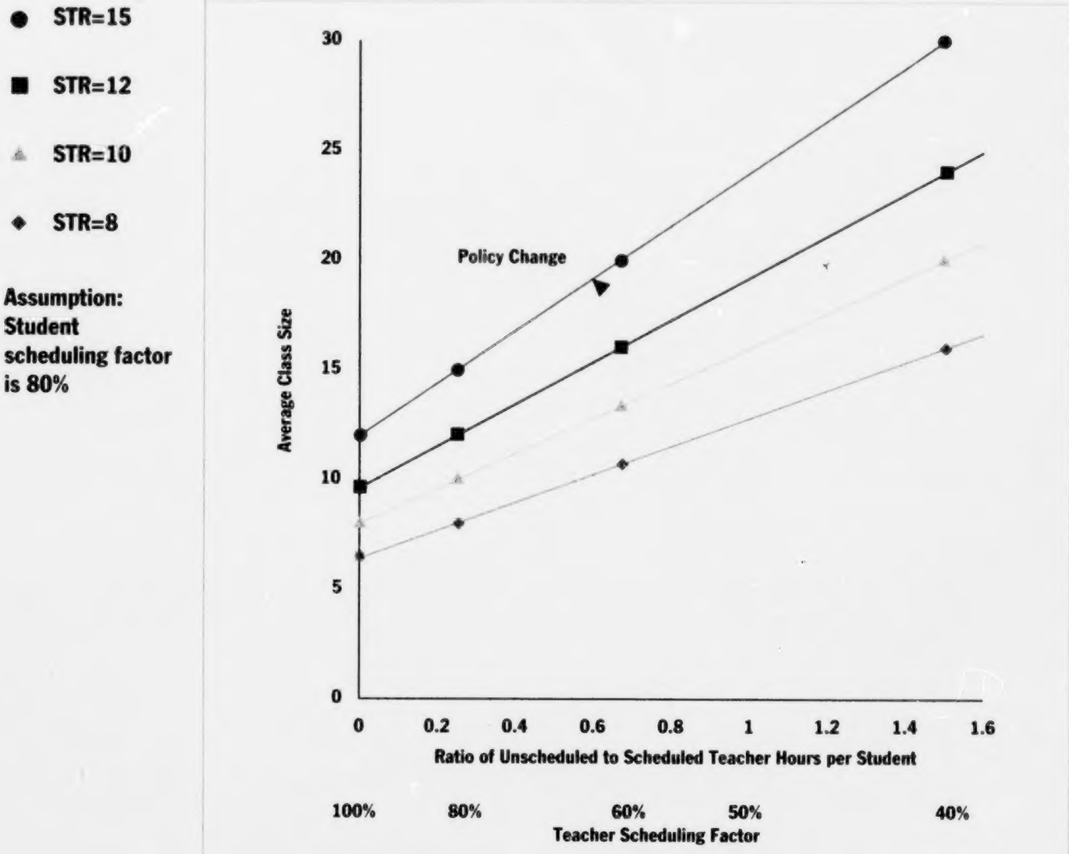
Policy Change	From	To
Student–teacher ratio	10	15
Teacher scheduling factor %	55	55
Ratio of unscheduled:scheduled teacher hours per student	0.85	0.85
Average class size	15	22.5

Many of these relationships are intuitive, and if you are an administrator with responsibilities for academic program and budget you will have undoubtedly experimented with them at length. But a formal analysis of the relationships makes them explicit and may help to suggest avenues for exploration and potential policy options that have been overlooked.

Lower Grades

IN VIEW OF THE ORGANIZATIONAL and structural differences between upper and lower grade level classes, we have taken a different approach in developing a second model for the lower grade levels. The following analysis applies to classes, sections, or groupings of students that normally meet with more than one adult. Examples would

Figure 33 Teacher Scheduling Factor, Average Class Size, and Ratio of Unscheduled to Scheduled Teacher Hours per Student



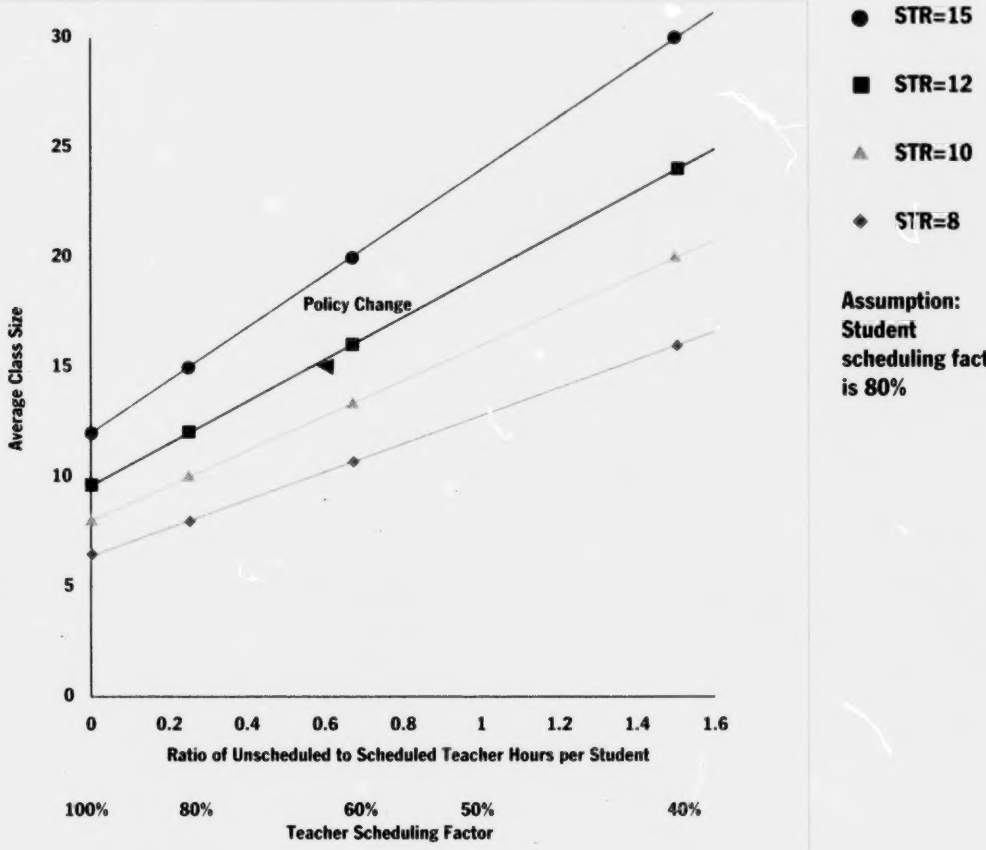
Assumption: Student scheduling factor is 80%

Policy Change	From	To
Student–teacher ratio	10	15
Teacher scheduling factor %	55	65
Ratio of unscheduled:scheduled teacher hours per student	0.85	0.55
Average class size	15	18

be elementary grade level classes with a lead teacher and one or more assistants, aides, or volunteers. At one extreme, schools may staff such student groups with two or more fully qualified professionals earning similar salaries or salaries on the same scale. At another extreme, some schools might staff such classes with one fully qualified professional teacher and one or more unpaid volunteers.

Differences in practice between schools may reflect different philosophies or approaches with regard to the roles of the additional adults. Some schools may consider the additional adults to be filling teaching roles, just as the lead, or primary, teachers are doing, thereby augmenting the teaching resources devoted to students in the group and genuinely reducing the student-teacher ratio in the classroom. Other schools may believe that the roles of the additional adults lie more in the area of non-teaching support. Such additional adults might support the lead teacher by con-

Figure 34 Teacher Scheduling Factor, Average Class Size, and Ratio of Unscheduled to Scheduled Teacher Hours per Student



Assumption: Student scheduling factor is 80%

Policy Change	From	To
Student–teacher ratio	10	12
Teacher scheduling factor %	55	65
Ratio of unscheduled: scheduled teacher hours per student	0.85	0.55
Average class size	15	15

tributing to classroom organization, helping children during transitions between activities, solving problems, etc.

The first kind of approach, in which the additional adult or adults are paid on the regular teacher salary scale, is almost certainly the most costly. The second approach, in which the additional adults are less qualified assistants, aides, apprentices, or volunteers, is less expensive. One way to measure and compare the allocation of financial resources in these classrooms is to use an index that shows the extra cost of the additional adults in relation to the cost of the primary or lead teacher. In effect, this index shows the relative cost of the supporting resources that complement the lead teacher.

To apply this analysis in your school, identify those classes, sections, or student groupings that normally meet with more than one adult. We'll call these "multiple adult groupings," or MAGs. For the purpose of this analysis, if an adult has other re-

Figure 35 Class Size and Individual Attention Scheduled and Unscheduled Teacher Time Theory of Model

Total number of students = S
Total number of teachers = T
Student-teacher ratio = $R = S/T$
Total number of periods in a week = P
Length of a period = L hours
Total academic hours = $H = P \cdot L$
Teacher scheduling factor (average fraction of total periods scheduled) = t
Student scheduling factor (average fraction of total periods scheduled) = s

Total number of scheduled teacher hours in class = $T \cdot t \cdot H$

Total number of scheduled student hours in class = $S \cdot s \cdot H$

Average class size = student hours/teacher hours = $S \cdot s \cdot H / T \cdot t \cdot H$ = $S \cdot s / T \cdot t$

Total scheduled teacher hours per student = $T \cdot t \cdot H/s$

Total unscheduled teacher hours per student = $T \cdot (1-t) \cdot H/s$

$$\frac{\text{Unscheduled teacher hours per student}}{\text{Scheduled teacher hours per student}} = \frac{(1-t)}{t}$$

sponsibilities to which a portion of his or her time is allocated, you should use only the portion of salary and benefits that you estimate is related to this adult's work with the multiple adult groups you have identified for your study. Now, calculate the:

$$\text{MAG Support Ratio} = \frac{\text{Total salaries and benefits for lead teachers and additional adults}}{\text{Total salaries and benefits for lead teachers only}}$$

Inter-school comparisons of this ratio may help to identify differences in patterns of allocating professional and paraprofessional resources in multiple adult class settings. Differences may be justified on the basis of philosophical commitments of the kind suggested above. Or they may be accidental and unplanned. The usefulness of comparative analysis is that it highlights differences and suggests where practice and rationale call for exploration and justification.

Comparisons of this ratio for a number of successive years in one school can also serve to indicate shifting patterns and suggest where careful review of the relationship between policy and practice may be called for.

116

Increases in cost per student sometimes arise from subtle, inconspicuous shifts over a period of years in just such patterns of resource allocation. By defining ratios or other indices that quantify key aspects of organization and practice, a school can build in an alert system that will enable it to monitor and respond to unplanned changes or to follow and document progress in deliberate attempts to achieve change.

Conclusion

MANY FACTORS INFLUENCE THE SIZE OF CLASSES—TRADITION, TEACHERS' workloads, the nature of existing school facilities, real and perceived comparisons with other schools, and beliefs about the relationship between class size and effective teaching and learning. But the tuition-driven and labor-intensive character of independent schools closely links average class size to per-student costs and to tuitions. Ultimately, schools make (or fail to make) decisions about trade-offs between class size, tuition, and affordability.

We believe that many independent schools may have some room for maneuver in considering larger classes. The research on class size and academic achievement suggests that the greatest gains from small classes occur in the elementary grades. Yet, for other reasons, class sizes in most independent schools tend to be smaller in the upper grades.

We encourage schools to reflect on the traditional assumption that individual attention goes hand in hand with small classes. We believe that individual attention depends at least as much, and possibly more, on how teachers spend their time *out of class.* We have offered analytic models we hope your school will find helpful in exploring the implications of class size policy changes over a period of time. These models are merely examples of new approaches to old problems. Schools themselves are in a position to develop other approaches and alternative organizational patterns for teaching; we encourage you to do so.

VII

Variety and Scale in School Programs: The Interplay Between School Mission and Market Forces

Peter Aitken
Nancy Kelley
Arthur Powell
Susan Stone

INTRODUCTION

WE BELIEVE THAT MANY INDEPENDENT SCHOOLS SUFFER FROM A SELF-inflicted diffusion of resources arising from their attempts to "be all things to all people" for a variety of reasons. In this chapter, we describe several approaches schools can adopt in undertaking a kind of self-assessment that focuses on issues of program variety and scale and their relation to institutional mission and marketplace forces.

It's important that these issues be viewed against the backdrop of those we've examined in each of the preceding chapters. The concerns on which this chapter focuses are closely interwoven with our basic concerns about access, affordability, and cost reduction.

We believe, further, that exploring the questions raised in earlier chapters is an effective way for school planners and policy-makers to discover, debate, and renew consensus on fundamental mission. Many schools have urgent incentives to grapple with financial equilibrium analyses, financial aid projections, faculty compensation targets, and policies for student-teacher ratio and class size. Engaging these challenging practical issues helps build momentum and consensus that will in turn support the more conceptual work to be done on mission. Ultimately, this is a cyclical process. Thinking about school practice, broader socioeconomic developments, and projections for the future leads us to reflect on institutional mission and on the capacity for adapting to change. Shifting conceptions of mission may in their turn translate into new ways of doing things in school. Schools with an appetite for this agenda will evolve, anticipating change, renewing themselves, and offering new models that constitute real educational leadership.

We begin this chapter with a brief discussion of the tension between "true" mission and market forces. True mission refers to the actual interpretation of mission in the day-to-day life of a school, as distinguished from statements found in catalogues and promotional literature. The marketplace, of course, offers a variety of forces—some welcome and healthy, others less so. Each school has the freedom to chart its own course, adapting or accommodating to some of these forces and choosing to resist others. We discuss the danger of allowing market forces to determine program development over a number of years in ways that are largely unlinked to reflection on institutional mission.

Next, we offer some observations about effective processes for engaging key constituents in working toward change in schools. Each school's mission statement expresses important, broad philosophical goals for the institution. It is vital that all stakeholders in the school be able to see how its program and its decisions about the allocation of resources are related to the goals flowing from its mission. A clear, thorough, and inclusive process for achieving this kind of understanding and agreement is critically important.

In our third and final section, we offer a variety of analytic approaches to the mission-program area. This area is inherently problematic, because discussions of mission involve intangible, qualitative issues, while analyses of program costs are ultimately quantitative. So we offer several approaches. We begin by suggesting how a school's expense budget can be used as the basis for a dialogue about the relation between mission and program. And we end by describing a quantitative model for exploring the same relationship. The several approaches are independent of each other. Schools are encouraged to try any of them. Who participates and how the work is done are ultimately more important than any one particular analytical method.

TRUE MISSION

ALTHOUGH IT IS HARD TO DISCUSS MISSION IN QUANTITATIVE TERMS, WE can easily look at how dollars are allocated to various parts of a school's program. In fact, we believe that it is very important for schools to reflect candidly on whether their program expenditures properly reflect consensus about institutional mission. If there is inconsistency—a real lack of fit—then there may be a window of opportunity to think about reduced expenses. (Of course, it is also possible that the same rigorous process of reflection might lead to decisions to *increase* expenses in order to make program more consistent with mission.)

By mission, we mean what heads, trustees, and senior faculty can agree on in a frank assessment of the school's current sense of its history, condition, purpose, and opportunities—not necessarily what's stated in catalogues, which tends to be an expression of ideals. True mission, we suggest, has everything to do with reality and with the conditions for institutional survival. Few independent schools have serious endowments or any significant regular income sources beyond their school family and community. Most are exceedingly vulnerable to population demographics (i.e., to their geographic and pricing relationships with the local market). They are therefore preoccupied with the characteristics of the applicant pool, for the nature of that pool determines long-range survival more than anything else.

Accordingly, we believe the true mission of most independent schools, reduced to its simplest form, is to attract and hold "good kids"—to sustain a student body whose values and attitudes themselves contribute to achievement of the school's purposes. The quality of the student body exerts a powerful influence on attracting and holding a good faculty. Together, the faculty and the kids are decisive factors in a school's local reputation. Thus, the true mission of most independent schools—again, to generalize—is to be good, happy, productive communities.

Attracting and holding a student body of such "good kids" often severely constrains a school's ability to think about program and its financing, and especially about the importance of limiting program growth. This is because the way to attract good kids is to make sure the school has no policy that would turn off or discourage an application from *any* good kid. The school must be able to offer something to everyone. The danger is that the school becomes more and more like the "shopping mall high school" (Powell, Farrar, and Cohen, 1985). The "shopping mall prep school" tries to emulate everything in the large suburban public schools to compete with that sector for good kids. For example, the shopping mall prep school wants to offer the student experiences as a stage designer, a tight end, and a junior-year calculus student.

The college admission process has insidiously helped push independent schools toward this financially hazardous strategy. It has done it in two ways: first, by abandoning any clear sense of concrete admission requirements that students must meet. This is especially true of those private colleges that still tend to set the agenda for so many prep schools. Outside the Northeast, the specific course requirements of attractive, central campus state universities often exert a more focused curricular influence on the prep schools in their regions. Second, elite private colleges have accelerated the rise of the shopping mall prep school by emphasizing special ability in one area as distinct from all-around ability in many. Thus it helps a school to have a girls' ski team, since the one girl on the team with serious Olympic potential has an inside track to the Ivy League, whatever else she can or can't do in school. This is called a "hook" and does not serve to set limits on what a school's appropriate program might include.

So the mission of most independent schools may imply an endlessly expanding program. Endlessly expanding programs pose two obvious threats. They run the risk of spreading the school's human and financial resources ever more thinly with the result that quality erodes. And they run the risk of growing steadily more expensive, with adverse effects on student body selectivity and access. In the section entitled "Questions About Program Variety and Scale," later in this chapter, we discuss implications of these issues in greater detail and suggest some analytic techniques for exploring them.

Evaluating Your School's Mission: Thoughts About Process

A DISCUSSION OF A SCHOOL'S MISSION SHOULD BE AN INTELLECTUAL challenge—thought-provoking, stimulating, exciting. In actual practice, suggesting such a discussion usually elicits glazed looks, frustration, impatience or, at the very least, "Oh, no. Not again!" But a discussion based on what a school says it exists for as opposed to where it actually allocates its resources can spark a heated conversation.

A practical approach for entering into a dialogue about mission and program will prove effective if it reflects the elements of good process set out in chapter II. At the outset, your school leadership should determine who is to be involved in a relatively small group, or "steering committee," to direct the dialogue. Participants ideally include policy-makers, money people, program people, those who stand to be most affected by potential change: in other words, representatives of the stakeholders. This group should develop a consensus about the purpose of the dialogue, about assumptions, ground rules, and responsibility for decision making, about broader participation and communication, and about a timetable.

Next, this steering committee can decide which of the models described in this chapter will be most useful, given the nature of the school, designate who will undertake the research, and agree upon how the data will first be shared and then upon the concentric rings of ensuing involvement, continued analysis, and discussion.

Most importantly, the discussion must not be limited to the business office or the boardroom but must honestly include representative perspectives from a range of school interest groups.

As noted earlier, this is not a defined linear process beginning at point A and ending with a product at point Z. Instead, it is a communications process to engage your school community, with the steering committee responsible for directing the discovery and ensuing discussion. The findings may then be referred to a strategic planning committee and various other board and school committees for incorporation into agendas and plans, or to the school head and trustees for decisions.

Each of the methods or models that follow contains its own set of suggestions and directions. Each provides a means to look in new ways at the school's mission and the centrality to it of program and to generate a basis on which to make informed decisions. No school will ever have the resources, human or financial, to do everything. The goal of the mission/program discussion is to clarify written philosophy and actual practice and to help the school implement policies that positively affect affordability over the long term.

There are no right answers, per se, to be derived from any of these models. If, after broad discussion, there is an awareness that your school's mission should change, then long-term, systemic approaches to restructuring its program and operations, beyond the scope of this book, may be indicated. But don't be daunted. Long-term change is approached incrementally. The key to building and sustaining the momentum for change lies in engaging the interests and energies of the school's major constituencies and articulating the evolving vision that emerges from their shared work. No one says the work is easy. Dean Henry Rosovsky once described the effort to redefine the core curriculum at Harvard in the 1980s as akin to trying to move a graveyard. On the other hand, how often one discovers that three months after the implementation of a programmatic change whose planning and politics have preoccupied the school community for months or years, the revolution looks in retrospect like a minor course correction!

METHODS AND MODELS

I. A Dialogue About Mission and Program

IN THIS APPROACH, WE SUGGEST HOW A BROAD-BRUSH ANALYTIC TREATMENT of a school's expenses can serve as a basis for a dialogue about the relationship between a school's program and its mission statement. The analysis follows the breakdown of expenses per student used in published NAIS statistics reports, itself closely reflecting characteristic operating budget statements used by many schools.

Tables 14–19 present examples of the kind of broad-brush expense analysis suggested as a basis for a dialogue about mission and program. These analyses, entitled "Comparative Analysis of Expense per Student," draw on financial operations data provided by member schools in response to the Fall 1991 NAIS survey. The data on these six pages are for real, though unidentified, NAIS member schools, one in each of six categories, for the 1990–91 school year. Averages for NAIS schools in each category are shown in the right-hand columns.

We suggest that you use this analysis as the basis of a discussion about the relationship between your school's mission and its program expenses. Mission statements are qualitative documents whose language refers to intangibles such as intellectual and social development, aesthetic appreciation, understanding other cultures, and citizenship. The challenge of the dialogue is to develop a sense of whether or not program expenditures, which are of course measured quantitatively, reasonably reflect the mission of the school. We recommend a dialogue with a minimum of constraints and ground rules but with a maximum of participation by key constituents. Though the dialogue about mission and program is ultimately limited by the incompatibility between the qualitative language of mission and quantitative measures of program priority, it can nonetheless yield valuable insights and begin to define the task of consensus building.

II. Questions About Mission: Program Growth and Market Forces

A SECOND APPROACH FOCUSES on how the school's program and offerings have changed in recent years. Such changes can be important indicators of market forces and also of cost increases.

There are a number of important questions that schools can ask themselves to help identify key issues among relationships between mission, market forces, program, and costs. Answers to these questions can point to where programmatic costs should be

Table 14 Comparative Analysis of Expense per Student, Sample Elementary Day School: 1990–91

	Sample Elementary Day School				NAIS Averages for Elementary Day Schools	
Expenses	Expense per Student		Percentage of Total Operating Expense		Expense per Student	Percentage of Total Operating Expense
Teaching Salaries	3,128		32.3		2,800	37.6
Instructional Support Salaries	435		4.5		197	2.6
Administrative Salaries	1,075		11.1		693	9.3
Other Salaries	662		6.8		559	7.5
Auxiliary Salaries		274		2.8		
Plant/Maintenance Salaries		168		1.7		
Secretarial/Clerical Salaries		219		2.3		
Benefits and Payroll Taxes	1,148		11.8		825	11.1
Student Activities	42		0.4		78	1.0
Financial Aid/Tuition Remission	1,574		16.2		480	6.4
Other	1,633		16.8		1,825	24.5
Instructional		255		2.6		
Athletic		42		0.4		
Auxiliary		338		3.5		
Other Services		0		0		
Plant		456		4.7		
PPRSM		175		1.8		
Administrative		367		3.8		
General		0		0		
Total Expense	9,697		100.0		7,456	100.0
Net Surplus (Deficit)	40		0.4		190	2.5

Source: NAIS statistics.

examined in light of the goal of enhanced access through greater affordability. For example, a school's international focus might result in a commitment to multi-year foreign language instruction; its belief in the developmental role of sports might underlie an extensive interscholastic program; a historic tradition in the performing arts might be expressed through intensive programs and specialized facilities; or a reputation for sensitivity to the needs of families might rest on expanding support services such as the coordination of multicultural, after-school, day-care, and transportation programs. Periodically, the costs of these commitments need to be reviewed within the context of the discussion about costs and affordability. Differences arising from interpretations of mission and from policy choices need to be understood and subjected to careful reexamination.

The following questions are examples of the kind of inquiry we recommend that schools undertake in order to understand the ways in which mission, market forces, and program development are interrelated. The list is not exhaustive, and schools will know best which additional questions deserve thoughtful consideration in their own contexts.

Table 15 Comparative Analysis of Expense per Student, Sample Elementary/Secondary Day School: 1990–91

	Sample Elementary/Secondary Day School				NAIS Averages for Elementary/Secondary Day Schools	
Expenses	Expense per Student		Percentage of Total Operating Expense		Expense per Student	Percentage of Total Operating Expense
Teaching Salaries	2,693		34.0		3,021	35.3
Instructional Support Salaries	296		3.7		218	2.5
Administrative Salaries	498		6.3		701	8.2
Other Salaries	388		4.9		696	8.1
Auxiliary Salaries		105		1.3		
Plant/Maintenance Salaries		121		1.5		
Secretarial/Clerical Salaries		162		2.0		
Benefits and Payroll Taxes	573		7.2		932	10.9
Student Activities	200		2.5		82	1.0
Financial Aid/Tuition Remission	1,494		18.8		738	8.6
Other	1,787		22.5		2,174	25.4
Instructional		227		2.9		
Athletic		94		1.2		
Auxiliary		159		2.0		
Other Services		0		0		
Plant		575		7.3		
PPRSM		0		0		
Administrative		314		4.0		
General		419		5.3		
Total Expense	7,930		100.0		8,563	100.0
Net Surplus (Deficit)	(926)		(11.7)		78	0.9

Source: NAIS statistics.

Remember, however, that the process for addressing these questions is as important as the answers to the questions themselves. What are the goals of the process? What assumptions, if any, are shared at the outset? Are there particular outcomes that are considered to be either essential or unacceptable? What is the timetable? Who will be involved? How will communication work? What are the roles and scope of individuals and committees? How, and by whom, will decisions be made?

Program

1. CREATE A PRIORITIZED LIST of the programs/activities/functions that are most clearly related to the core elements of your school's mission. Establish cost estimates for each. Examine those activities that fall toward the bottom of the list in terms of their cost. Examine those that appear near to the top of the list in terms of their costs. Discuss the relationship between priority and costs. What are the implications of this analysis for your school?

Table 16 Comparative Analysis of Expense per Student, Sample Secondary Day School: 1990–91

Expenses	Sample Secondary Day School				NAIS Averages for Secondary Day Schools	
	Expense per Student		Percentage of Total Operating Expense		Expense per Student	Percentage of Total Operating Expense
Teaching Salaries	2,120		39.7		3,101	32.6
Instructional Support Salaries	398		7.4		259	2.7
Administrative Salaries	405		7.6		834	8.8
Other Salaries	395		7.4		783	8.2
Auxiliary Salaries		57		1.1		
Plant/Maintenance Salaries		196		3.7		
Secretarial/Clerical Salaries		141		2.6		
Benefits and Payroll Taxes	597		11.2		1,032	10.9
Student Activities	43		0.8		133	1.4
Financial Aid/Tuition Remission	43		0.8		687	7.2
Other	1,345		25.2		2.671	28.1
Instructional		100		1.9		
Athletic		21		0.4		
Auxiliary		201		3.8		
Other Services		0		0		
Plant		744		13.9		
PPRSM		0		0		
Administrative		90		1.7		
General		189		3.5		
Total Expense	5,346		100.0		9,501	100.0
Net Surplus (Deficit)	(389)		(7.2)		333	3.5

Source: NAIS statistics.

2. Make a list of programs/activities/functions added in the past five years and discuss how these fit within your school's priorities.

3. Make a list of programs/activities/functions discontinued in the past five years.

Market Forces

1. LIST WAYS IN WHICH MARKETPLACE FORCES have influenced activities, offerings, functions. Examples of such forces might be:

(a) Competition with other independent schools;
(b) Competition with public schools;
(c) Requirements for admission to next level of education: secondary school, college, university;
(d) Family demographics;
(e) Parent demand.

Try to reach a consensus about a hierarchy of competitive advantages. For example, a school may decide that it will compete primarily on the basis of academic program supporting an outstanding placement record for its graduates, and that this strategy will sustain an applicant pool sufficiently strong to allow the school to resist parent pressure for expanded athletic programs.

Table 17 Comparative Analysis of Expense per Student, Sample Day/Boarding School: 1990–91

	Sample Day/Boarding School				NAIS Averages for Day/Boarding Schools	
Expenses	Expense per Student		Percentage of Total Operating Expense		Expense per Student	Percentage of Total Operating Expense
Teaching Salaries	2,980		25.7		2,868	23.8
Instructional Support Salaries	363		3.1		300	2.5
Administrative Salaries	1,136		9.8		970	8.1
Other Salaries	1,599		13.8		1,292	10.7
Auxiliary Salaries		613		5.3		
Plant/Maintenance Salaries		484		4.2		
Secretarial/Clerical Salaries		501		4.3		
Benefits and Payroll Taxes	883		7.6		1,132	9.4
Student Activities	250		2.2		140	1.2
Financial Aid/Tuition Remission	959		8.3		1,121	9.3
Other	3,441		29.6		4,212	35.0
Instructional		267		2.3		
Athletic		56		0.5		
Auxiliary		865		7.5		
Other Services		52		0.4		
Plant		912		7.9		
PPRSM		303		2.6		
Administrative		382		3.3		
General		604		5.2		
Total Expense	11,609		100.0		12,035	100.0
Net Surplus (Deficit)	253		2.2		160	1.3

Source: NAIS statistics.

2. Ask parents for three criteria by which they gauge the school's success or effectiveness in paying "individual attention" to their children. Answers should be outcomes or results, such as improved academic performance or enhanced self-esteem, that parents can link to specific experiences their children have had in school.

Explore the implications of parents' answers for long-range thinking about pertinent issues such as class size and unscheduled teacher time.

3. Ask "next schools"—the schools that serve your graduates—or staff members in your own school who are responsible for student placement in next schools what are the three most important qualifications in admission decisions. How closely do these relate to explicit mission elements of your own school?

III. Questions About Program Variety and Scale

ALTHOUGH THE ISSUES OF PROGRAM VARIETY and scale are closely linked to the influence of market forces, we separate them here because they are easier to address in terms of dollars and therefore begin to open the door to a more quantitative analysis.

Table 18 Comparative Analysis of Expense per Student, Sample Boarding/Day School: 1990–91

	Sample Boarding/Day School				NAIS Averages for Boarding/Day Schools	
Expenses	Expense per Student		Percentage of Total Operating Expense		Expense per Student	Percentage of Total Operating Expense
Teaching Salaries	4,582		19.6		3,855	16.9
Instructional Support Salaries	313		1.3		591	2.6
Administrative Salaries	1,557		6.7		1,714	7.5
Other Salaries	3,179		13.6		3,175	13.9
Auxiliary Salaries		177		0.8		
Plant/Maintenance Salaries		2,160		9.3		
Secretarial/Clerical Salaries		842		3.6		
Benefits and Payroll Taxes	2,377		10.2		2,355	10.3
Student Activities	192		0.8		229	1.0
Financial Aid/Tuition Remission	2,515		10.8		2,289	10.0
Other	8,618		36.9		8,638	37.8
Instructional		982		4.2		
Athletic		205		0.9		
Auxiliary		611		2.6		
Other Services		15		0.1		
Plant		4,611		19.8		
PPRSM		0		0		
Administrative		2,184		9.4		
General		10		0		
Total Expense	23,333		100.0		22,846	100.0
Net Surplus (Deficit)	379		1.6		(314)	(1.4)

Source: NAIS statistics.

The gap between the qualitative language of mission statements and the quantitative realities of expense budgets can be partially bridged by focusing on the conceptions of variety and scale in independent school organization and programs.

Program variety addresses the reality that independent schools typically try to offer almost everything to help kids develop. Within the supposedly focused college prep orientation of our schools, a plethora of opportunities for student development are represented. Competition from large suburban high schools in the 1950s and afterwards forced independent schools to add and add in order to keep up. They are still adding.

The commitment to small and human scale supplements the commitment to variety. What impresses the independent school market is not program variety alone but its juxtaposition with small program scale. That is, independent schools are perceived to offer all the *opportunities* of suburban public schools, but with the added dimension of extensive human *support.* This includes such quantifiable matters as small schools, small classes, extensive out-of-class contact, advising systems, and so on.

Institutional self-assessment models should help schools explore and understand the financial implications of their commitments to both program variety and small

Table 19 Comparative Analysis of Expense per Student, Sample Boarding School: 1990–91

	Sample Boarding School				NAIS Averages for Boarding Schools	
Expenses	Expense per Student		Percentage of Total Operating Expense		Expense per Student	Percentage of Total Operating Expense
Teaching Salaries	3,814		15.1		3,615	16.5
Instructional Support Salaries	590		2.3		608	2.8
Administrative Salaries	1,816		7.2		1,940	8.9
Other Salaries	2,182		8.6		2,843	13.0
Auxiliary Salaries		133		0.5		
Plant/Maintenance Salaries		1,016		4.0		
Secretarial/Clerical Salaries		1,033		4.1		
Benefits and Payroll Taxes	2,435		9.6		1,911	8.7
Student Activities	488		1.9		210	1.0
Financial Aid/Tuition Remission	2,319		9.2		1,588	7.3
Other	11,670		46.1		9,179	41.9
Instructional		366		1.4		
Athletic		298		1.2		
Auxiliary		3,650		14.4		
Other Services		1,146		4.5		
Plant		2,740		10.8		
PPRSM		397		1.6		
Administrative		2,068		8.2		
General		1,005		4.0		
Total Expense	25,314		100.0		21,895	100.0
Net Surplus (Deficit)	(809)		(3.1)		243	1.1

Source: NAIS statistics.

scale. A traditional approach is to use comparative data from other similar institutions to document the range of typical practice, indicate potential room for policy maneuver, and suggest what trade-offs might be considered in attempting to sustain important commitments with somewhat smaller expenditures.

The "Variety and Scale Analysis for Sample School," shown as Table 20, uses a number of ratios and indicators selected to "flag" cost-related implications of variety and small scale in school programs. These are offered as examples to illustrate an approach. Individual schools will be aware of additional measures that are appropriate for them.

The values for a number of the ratios and indicators for one NAIS member school over a five-year period are shown in the table. These values are calculated from data submitted to NAIS by the school in response to the annual statistics surveys. Additional ratios and indicators are suggested in Table 20 but left blank because data for their calculation are not included in the NAIS statistical archive. We suggest that schools consider developing their own lists of key indicators and monitoring them carefully over time.

Table 20A Variety and Scale Analysis for Sample School

	1986–87	1987–88	1988–89	1989–90	1990–91
Expense Ratios (Percentages)					
Instruction/Total	37.4	38.8	38.3	34.4	34.7
Plant/Total	11.5	11.9	10.6	10.0	9.9
Administration/Total	17.8	17.8	18.7	19.8	18.8
Personnel Ratios (Percentages)					
Teaching/Total	50.4	52.0	55.9	52.6	53.1
Administration/Total	9.8	10.2	5.9	6.3	4.1
Other/Total	39.7	37.6	38.1	40.9	42.6
Full Time Equivalency Ratios (Percentages)					
FTE(Instruction)/FTE(Instruction Plus Administration)	83.1	85.6	85.6	92.9	90.4
FTE(Admistration)/FTE(Instruction Plus Administration)	16.8	14.4	14.4	13.8	14.0
Student Multiples					
Total Students/Total Adults	6.0	5.7	5.5	6.0	5.1
Total Students/FTE(Instruction)	12.4	11.3	11.2	11.2	10.8
Teacher Loads					
PS	—	—	11.0	15.0	16.0
Grades K–5	—	—	22.0	19.0	18.0
Grades 6–8	—	—	80.0	80.0	80.0
Grades 9–12	—	—	80.0	80.0	80.0
Average Class Size (Classes with one teacher)					
PS					
Grades K–5					
Grades 6–8					
Grades 9–12					
Average Class Size (Classes with more than one teacher)					
PS					
Grades K–5					
Grades 6–8					
Grades 9–12					

Source: NAIS statistics.

A school can examine these ratios in light of its commitments. For example, a school with a deep philosophical commitment to student support or a school that has been humanely slow to lay off staff in the face of declining student enrollment may find that its ratio of total number of students to total number of adults has declined over the five-year period. A school that maintains special facilities associated with a performing arts program or an athletic program, or that has a boarding department that is being phased out, may find that its plant expense ratio (plant expense as a percentage of total operating expense) is increasing. Analyses of trends in these ratios can provide valuable support for periodic reviews of the relationship between a school's resource allocation and its program commitments.

As has already been noted, independent schools offer a wide variety of programs, a variety that often rivals those to be found in much larger public schools. The following questions are examples of the kind of inquiry that can be helpful in identifying the cumulative effects of external pressures to expand or add programs. The answers can

Table 20B Variety and Scale Analysis for Sample School

	1986–87	1987–88	1988–89	1989–90	1990–91
Weekly Schedule and Teacher Assignments					
Total Number of Periods in Week					
Average Percentage of Periods Assigned (PS Teachers)					
Average Percentage of Periods Assigned (Teachers in Grades K–5)					
Average Percentage of Periods Assigned (Teachers in Grades 6–8)					
Average Percentage of Periods Assigned (Teachers in Grades 9–12)					
Number of "Specials" Per Week					
PS					
Grades K–5					
Grades 6–8					
Program Variety					
Number of Foreign Languages Offered					
Number of Advanced Placement Courses Offered					
Number of Interscholastic Teams (All Seasons)					
Number of Elective Courses					
Other Indicators					
—					
—					

help to focus cost analyses. We offer here simply a framework or process in which to pursue the answers. These questions were central for one school that looked at changes in its program over a five-year period. This is the same school as the one whose five-year data are shown in Table 20.

1. How many advanced placement subjects are taught?
2. How many foreign languages are taught?
3. How many interscholastic athletic teams are there?
4. How many elective courses are taught?
5. How many times per week do lower school arts, physical education, and music classes meet?
6. How many "specials" are there per week for each grade?
7. What is the number of full-time and part-time administrators?
8. How many adults, full-time and part-time, other than classroom teachers, work at the school?

This approach has strengths that extend its power beyond that of the dialogue about mission and program. The first of these is that by fostering an understanding of expenses in terms of variety and scale, it can help decision-makers review priorities and make trade-offs in ways that are sensitive to key aspects of a school's marketability. The second strength of this analysis is that it identifies a number of ratios and indicators related to variety and scale that have not been routinely calculated by schools

Table 20C Variety and Scale Analysis: Notes and Definitions

Expense Ratios

Numbers in parentheses refer to questions on the Financial Operations Information Form of the NAIS Fall Survey
Instruction / Total = (Teaching salaries (9) + Instructional Support salaries (10) + Other instructional expense (16A)) / Total Expenses
Plant / Total = (Plant salaries (12B) + Other Plant expense (16E) + PPRSM (16F)) / Total Expenses
Administration / Total = (Administrator salaries (11) + Secretarial/clerical salaries (12C) + Other administrative expense (16G)) / Total Expenses

Personnel Ratios

Numbers in parentheses refer to the Student and Staff Information Form of the NAIS Fall Survey
Teaching / Total = Total body count for male and female teachers and instructional support personnel (4) / Total number of school employees (4)
Administration / Total = Total body count for male and female administrators (4) / Total number of school employees (4)
Other / Total = Total body count for male and female other employees (4) / Total number of school employees (4)

Full-time Equivalency Ratios

Numbers in parentheses refer to the Student and Staff Information Form of the NAIS Fall Survey
FTE (Instruction) / FTE (Instruction + Administration) =

$$\frac{\text{FTE (Teaching) (5A) + FTE (Instructional Support) (5B)}}{\text{FTE (Teaching) (5A) + FTE (Inst. Support) (5B) + FTE (Administration) (5C)}}$$

FTE (Administration) / FTE (Instruction + Administration) =

$$\frac{\text{FTE (Administration) (5C)}}{\text{FTE (Teaching (5A) + FTE (Inst. Support) (5B) + FTE (Administration) (5C)}}$$

Student Multiples

Numbers in parentheses refer to the Student and Staff Information Form of the NAIS Fall Survey
Total Students / Total Adults = Total enrollment (3) / Total number of school employees (4)
Total students / FTE (Instruction) = Total enrollment (3) / FTE (Teaching) (5A) + FTE (Inst. Support) (5B))

Teacher Loads

Data are from responses to question 5 on the Student and Staff Information Form of the NAIS Fall Survey

or published in NAIS statistics. And so it offers new measures and insights that may be helpful in efforts to contain or reduce costs.

IV. A Quantitative Model for Mission and Program Analysis

BECAUSE IT IS EVENTUALLY EXPRESSED in terms of dollars, in the final analysis cost containment or reduction is inescapably a quantitative endeavor. Despite the difficulty of trying to translate mission into quantitative terms, the effort is not only justifiable, it is essential. Key policy-makers, such as trustees and administrators, need to understand and broadly agree about priorities in the school's mission and about how these are reflected in the allocation of resources to program. Without such consensus, any effort to contain or reduce costs is basically a shot in the dark, lacking the integrity of a policy foundation and unlikely to be sustained or effective.

The following prototype model of a process for quantitative analysis of mission and program in relation to each other illustrates one possible approach. Preliminary reactions have suggested that schools may strongly resist even the rough quantification of intangible, qualitative elements in school mission. Nevertheless, we offer it here for your consideration and urge you to try it, using a limited set of data for your school.

Outline of Steps

1. ENGAGE A GROUP OF COLLEAGUES in reviewing your school's mission statement and identify what you consider to be its key elements.

Develop a consensus about the allocation of the school's total resources (human, physical, financial) to achieve these mission elements. For example, you might decide that 35 percent of total resources should be going to academic/intellectual development, 10 percent to social development, 10 percent to spiritual development, and so on (Table 21 gives an example). Of course, in practice, dollars aren't channeled to different mission-related objectives in such a way that they can be easily separated or identified. But think of this exercise in assigning percentages of total resources to mission elements as a way of forging a working consensus about priorities and emphases. The discussion and the process are very important.

Here's a practical way to go about it. Try this with a small group of colleagues, after a good discussion of the relationship between mission, program, and cost, and after acknowledging the difficulty of quantifying the intrinsically qualitative components of a mission statement. Label a number of containers with what the group agrees are the key elements in your school's mission statement. For example, one container might be labeled "intellectual development," another "aesthetic sensitivity," a third "appreciation of other cultures," and so on. Then give each participant 100 chips or counters to distribute among the containers according to each one's sense of an appropriate allocation of the school's resources to the various elements of its mission. Count the chips in each container, divide by the number of participants in the exercise, and record the resulting numbers as the percentage of resources to be allocated to each of the mission elements.

2. Next, analyze the activities or functions that people perform. You might choose to do this analysis for a selected group of people the first time, while you a get a feel for how the process works. Ultimately, if you consider the technique powerful, you will want to extend it to include all your professional and nonprofessional staff. Table 22, entitled "Sample Activity Analysis," covers seven faculty members and two administrators at a very small day school and makes arbitrary assumptions, purely for the purpose of illustration, about the hours per week they work and about their salaries.

There are four steps in the Activity Analysis.

(a) List the functions that people perform.
(b) Allocate each person's time among the listed functions.
(c) Translate these time allocations into dollar allocations, using an individual salary-per-hour figure for each person.
(d) Total the hours and the dollars for each function or activity.

Table 21 Desired Allocation of Resources to Mission Elements, Sample

Intellectual Development	35%
Social Development	10%
Spiritual Development	10%
Citizenship	5%
Physical Development	10%
Service	5%
Independence	10%
Institutional Climate	5%
School-Family-Child	5%
Cultural Diversity	5%

Table 22 Sample Activity Analysis

			Allocation of Hours and Dollars to Activities									
			Teaching		Supervise		Counsel		Ex-Curric.		Parents	
Name	Salary	Salary per Hr.	Hrs	$	Hrs	$	Hrs	$	Hrs	$	Hrs	$
Jones	30,000	20.0	20	400	3	60	1	20	5	100	2	40
Smith	30,000	20.0	20	400			5	100			5	100
Robinson	30,000	20.0	30	600	2	40			8	160		
Williams	28,000	18.7	30	561								
Jackson	27,000	18.0	30	540					10	180		
O'Malley	25,000	16.7	25	148	5	84			5	84		
Shenberg	21,000	14.0	30	420	3	42	2	28	5	70		
- - -												
- - -												
Head	50,000	25.0					5	125			10	250
Asst. Head	40,000	20.0					15	300			10	200
- - -												
Totals			185	3,339	13	226	28	573	33	594	27	590

3. Now proceed to the Mission Analysis. This has five parts. The model example is shown in Table 23, entitled "Sample Mission Analysis."

(a) Decide how each activity or function contributes to the achievement of mission elements. For example, you might decide that teaching is aimed 80 percent at intellectual development, 15 percent at fostering independence, and 5 percent at social development. List these percentage allocations in the relevant activity column against the appropriate mission element. When you have finished, the percentages in each activity column should total 100. You may oc-

Table 23 Sample Mission Analysis

	Contribution of Activities to Achievement of Mission									
	Teaching		Supervise		Counsel		Ex-Curric.		Parents	
Mission Element	%	$	%	$	%	$	%	$	%	$
Intellectual Development	80	2,671					20	119		
Social Development	5	167			80	458	60	356		
Spiritual Development										
Citizenship					15	86	10	59		
Physical Development										
Service							10	59		
Independence	15	501			5	29				
Institutional Climate			50	113						
School-Family-Child									100	590
Cultural Diversity										
Not Related to Mission			50	113						
Total	100	3,339	100	226	100	573	100	593	100	590

Sports		Admin.		Custodial		Admission		Placement		Dev/FR		Total	
Hrs	$	Hrs	$	Hrs	$	Hrs	$	Hrs	$	Hrs	$	Hrs	$
5	100	1	20	3	60							40	800
		5	100			5	100					40	800
												40	800
10	187											40	748
												40	720
5	84											40	668
												40	560
		20	500			3	75			2	50	40	1,000
		5	100					10	200			40	800
20	371	31	720	3	60	8	175	10	200	2	50	360	6,896

casionally have to use the special mission element category "Not related to mission." Again, this cannot be an exact science. The quantitative exercise is a way of elucidating emphases and priorities, and it has great potential to generate productive dialogue about what people are doing and how their activities contribute to the achievement of the school's mission. The method that a school uses to reach these decisions is a matter of choice. Some may invite staff to make individual decisions. Others may adopt some form of collective process.

Sports		Admin.		Custodial		Admission		Placement		Dev/FR		Total	
%	$	%	$	%	$	%	$	%	$	%	$	$	%
		10	72			20	35	10	20	5	2.5	2,919	42
10	37	10	72	50	30	10	18	10	20	5	2.5	1,161	17
		10	72			10	18	10	20	5	2.5	112	2
10	37	10	72	25	15	15	26	10	20	5	2.5	318	5
80	296	10	72					10	20	5	2.5	391	6
		10	72					10	20	5	2.5	154	2
		10	72					10	20	5	2.5	625	9
		10	72	25	15	15	26	10	20	5	2.5	249	4
		10	72			15	26	10	20	5	2.5	711	10
		10	72			15	26	10	20	55	27.5	146	2
												113	2
100	370	100	720	100	60	100	175	100	200	100	50	6,896	100

(b) Now take the dollar total for each activity or function (from the bottom line on the "Sample Activity Analysis") and use the percentages to distribute the dollar total among the indicated mission elements on the "Sample Mission Analysis." When you have finished, dollar totals in the activity columns on the "Sample Mission Analysis" should match dollar totals from the "Sample Activity Analysis."

(c) For each mission element, add the *dollar* totals *across* the page and enter in the "$" column at the right-hand side under "Total." Do *not* add the *percentages across* the page!

(d) Add the mission element total dollars in the next-to-last column from the right to get a grand total.

(e) Calculate the percentage of the grand total represented by each mission element total and enter in the "%" column at the right-hand side of the table. Apart from rounding errors, these percentages should add up to 100.

4. Finally, chart the desired and actual allocations of resources to achievement of mission elements against each other. The example from our model is shown in Figure 36, "Allocation of Resources to Achievement of Goals in Mission Statement: Desired versus Actual."

Notes About the Sample Analysis:

(a) The time period covered in the sample analysis is one week. Other time periods can be used. The longer the time period selected, the more representative a picture it will yield, but the harder it will be to arrive at decisions about the allocation of time.

(b) Faculty members Jones, Smith, Robinson, Williams, Jackson, O'Malley, and Shenberg work 35 weeks in a year. Each week is nominally 40 hours. Total hours per year are rounded up to 1,500 to calculate salary per hour.

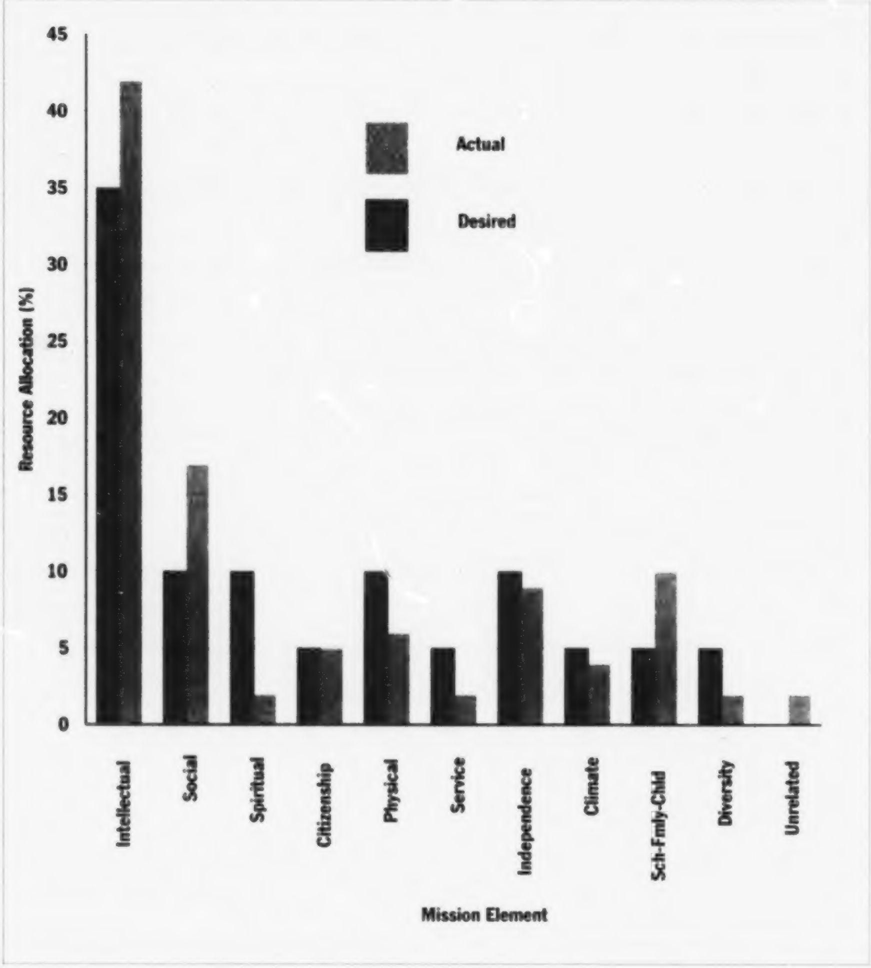
The Head and the Assistant Head each work 50 weeks per year. The weeks are nominally 40 hours. Total hours per year are 2,000.

(c) The "Sample Activity Analysis" allocates each professional staff member's 40 hours to various activities or functions. The way in which these allocations are calculated can be devised by a school. Individuals can be asked to suggest their own allocations, or a more collective approach can be followed. Based on these allocations and the salary-per-hour data for each staff member, total dollar allocations to each activity or function are calculated and appear at the bottom of each activity column.

(d) In the "Sample Mission Analysis," the contributions of each *activity* or *function* to achievement of *mission* elements are noted in the "%" column. For example, 80 percent of teaching time is considered to contribute primarily to intellectual development, 5 percent to social development, and 15 percent to fostering independence. Again, these relationships can be arrived at individually or collectively. There is a good deal of latitude for your school to devise its own method.

In the "$" columns, the total dollars for each activity or function (from bottom line of the "Sample Activity Analysis") are divided among the mission el-

Figure 36 Allocation of Resources to Achievement of Goals in Mission Statement, Desired versus Actual



ements using the percentages in the adjacent columns. For example, the total of \$3,339 allocated to teaching is divided among intellectual development (80% x \$3,339 = \$2,671), social development (5% x \$3,339 = \$167), and independence (15% x \$3,339 = \$501).

Column totals show dollar totals for each activity or function and match the column totals on the "Sample Activity Analysis."

Row totals (at the far right) show dollars for each mission element and percentages of overall expenditure attributable to each mission element.

(e) This analysis is a sample. It addresses only two kinds of resources: teacher time and administrator time. A more comprehensive analysis includes other major resources such as facilities, equipment, energy, other materials and supplies, services, and nonprofessional staff time.

CONCLUSION

WE HOPE THAT THIS CHAPTER HAS HIGHLIGHTED THE IMPORTANCE of a critical analysis of the elements of an individual school's mission statement and the relationships between these elements and actual program costs. We also hope that each school has been able to identify relevant and applicable approaches to exploring these relationships. We encourage you to use the approaches suggested here as a springboard for developing further methods that will enhance an understanding of your school's own unique circumstances. Finally, and most importantly, we hope that we have persuaded schools that it is important to extend discussion of these vital issues beyond the business office and selected committees of trustees and administrators to include participation by all the school's major constituencies.

VIII

Agenda for Future Research

Peter Aitken
Thomas Vitullo-Martin

INTRODUCTION

NAIS COLLECTS A WEALTH OF DATA ON ENROLLMENT, STAFFING, AND finance from its member schools—the most comprehensive data collection effort among associations of private schools. But for analysis of the issues surrounding pricing and affordability we found a dearth of information. We have been acutely aware of breaking new ground as we struggled with the issues addressed in this book. We have repeatedly acknowledged to each other how much we don't know and how much there is to know.

Continued efforts to understand the impact of pricing strategies on affordability in independent schools and to monitor developments will depend on further research in three specific areas:

(a) The financial profile of current independent school families; further development of a model of the relationship between family income and pricing; projections of family incomes, school tuitions, and financial assistance budgets.

This will support and extend recent studies of the local, regional, and national markets of families independent schools wish to attract as clients. Of particular significance are the degree of penetration of this market and factors affecting market decisions by clients and potential clients.

(b) The effects of federal and state governments and the courts, through tax policies and a variety of legislative and judicial actions, on the financial condition and social character of independent schools.

(c) Assessments of the impact on independent schools of educational technology and of how significant competitive developments in both the public and private school sectors may influence the character and identity of independent schools.

FINANCIAL CHARACTERISTICS OF INDEPENDENT SCHOOL FAMILIES

REPEATEDLY, THOSE OF US WORKING ON THIS PROJECT WERE STOPPED by the same problem: it is clear that the high tuitions of NAIS schools limit, or at least significantly define, who attends them. But most of the questions that are most important to schools—how to market themselves, how to target their markets, how to expand their markets, how to differentiate the market, how to subsidize one portion of the market and not another—cannot be asked without knowing something about the socioeconomic characteristics of the families now using the schools, nor without knowing something about the characteristics of similar families in similar areas who are not using the schools—what in marketing terms would be called the market segment and penetration of that segment. Simply put, are the schools presenting themselves as a realistic option to all who might be interested in enrolling their children?

Repeatedly throughout the development of this book, we came back to the central problem in designing a reasonable strategy for the future: we did not know enough about whom our schools are attracting, how the "income filter" is working, and how successfully financial assistance programs are overcoming the filter's effects. Family income information for all families using the schools, and other information that differentiates these families from those choosing public or other private schools, is central to any plan. Income information is critical to marketing, to targeting, and to public policy impact analysis.

A number of studies have begun to answer some of these question in recent years. The U.S. Department of Education's National Education Longitudinal Study of 1988 (NELS:88), covering 25,000 eighth graders in 1,000 public and private schools in 1988 with subsequent follow-up studies at two-year intervals, is an unprecedented source of information about students, teachers, and families. NAIS' own Independent Education Fund (IEF) undertook opinion surveys and focus group discussions in eight large U.S. cities during 1990 and 1991 centering around parental decisions on school choices for their children. Periodic analyses undertaken by the School and Student Service for Financial Aid at the Educational Testing Service in Princeton, New Jersey, offer detailed insights into the financial circumstances of families applying for financial aid at private schools. But they do not explore the financial circumstances of the remaining families that pay full tuitions. Several individual independent schools have, in the past few years, carried out studies of their own parent bodies in order to develop an understanding of the economic profile of the families they serve and to be able to track it from year to year.

Independent schools should draw on all these resources and others as they seek an increasingly sophisticated sense of their current and potential clientele and of the changing character of the marketplace.

TAXATION AND LEGISLATION

NAIS SCHOOLS COMPETE FOR STUDENTS WITH EACH OTHER, WITH other private schools, and most of all with public schools, especially public schools in affluent districts. But the competition is highly biased by public policy in favor of the public sector—the public schools are "free." We put "free" in quotes because public schools are free only to residents of their own taxing jurisdictions; more properly stated, they are supported by a mandatory, community-assessed, property-wealth-based "tuition." This public "tuition" benefits from favorable tax treatment, in that it qualifies as a deduction from taxable income. In contrast, tuitions at independent and all other private schools are not tax-deductible.

Not only does public policy treat differently the *payments* for schooling, but it also treats differently in the two sectors matters that affect the *costs* of schooling, and therefore the pricing. In some states, for example, public schools are required to be unionized, required to provide certain kinds of instruction, required to buy specific books, required to hire teachers with specific licenses, and so on. Until recently, private schools have been free of many of these requirements. But increasingly, particularly at the federal level, initiatives are under way to extend many of these policies to private schools. These efforts include the National Educational Goals, the National Teacher Certification movement, and others. There are comparable movements at the state level in a number of states.

In the past, NAIS has been caught in a dilemma. The Association honors the ideal of high-quality universal education, but itself reaches only a small segment of the entire society, principally the most wealthy. It has generally taken, therefore, a low-profile role with regard to proposed changes in public policy (e.g., in taxation issues, or in extending higher education-type loans or grants to elementary or secondary students) that would make its schools more accessible to the average family, on the grounds that these might spur a flight from, and a weakening of, public schools, with harmful effects on educational opportunities for many students.

The gathering momentum of school choice initiatives has implications for independent schools, but as yet it is too early to understand what these implications may be. How may choice programs influence opportunities for independent schools? How may they affect the character of independent schools? What will be appropriately sensitive independent school positions with regard to emerging choice programs? Will choice programs make it more or less likely that productive collaborations between independent and public schools can be developed?

With regard to tax policy, is it possible that a comprehensive study of the de facto tuition phenomenon in the public school sector and the tax costs of existing independent school financial assistance methodology could help enhance educational opportunities for more students from middle-income and low-income families?

COMPETITION AND TECHNOLOGY

SCHOOLING, AND THE ROLE IT PLAYS IN THE EDUCATION OF YOUTH, WILL change considerably in the next 15 to 20 years. Briefly, we explore some of the reasons for this prediction, each of which points to the need for research and understanding.

First, the composition of the private school sector is changing and is likely to continue to change. For the past two decades, the non-Catholic private school sector has been growing, while Catholic and a few other denominational school systems have contracted. The Catholic school contraction has approximately offset, in numbers, the expansion in other areas. If Catholics had continued to operate as large a system as they had—population mobility and demographics in the main prevented that—about 17 percent of all students would be in private schools today. At least 25 percent of all students would attend private schools for some of their academic careers.

Collectively, the private school sector has experienced relatively constant and substantial growth. The growth has come in waves—first independent schools, then Hebrew, then Christian. Each movement has exhibited rapid initial growth, followed by a period of slower growth, a shakeout of weaker institutions, stability, and consolidation. And, of course, some of these movements have overlapped.

There are three movements in the wings that may constitute the next round of growth: center city schooling, home schooling, and for-profit schools. Each of these movements has the potential to challenge NAIS schools, competing for students and, more importantly, competing for primacy in defining what constitutes a good education.

The center city schools are being founded in the shells of the former public and Catholic schools. It is not at all certain that these schools are economically viable, given the limited resources of the families they serve, but communities have been developing alternative funding approaches, and great pressure is being exerted to capture a portion of the current public education expenditure for these new private schools.

Home schooling is a movement traditional school organizations tend to dismiss, but it is apparently a growing movement. Estimates of the number of children now involved in home schooling vary widely, but most believe the average is between 5,000 and 10,000 students per state—that is 250,000 to 500,000 students nationally, a number comparable to the total enrollment in NAIS schools. A variety of motivations—religious, political, ideological, and others—underlie parents' decisions to educate their children at home. Home schooling, in its broadest sense, has growing significance in the context of private education.

The proposed Edison Project schools are the boldest example of a new kind of for-profit school. Entrepreneur Chris Whittle has proposed a publicly held, for-profit company that would credibly reorganize education. Whittle is, in essence, redesigning the school to take advantage of communications and computer technology. His Edison Project schools will be large and centralized in the way McDonald's is centralized—freestanding economically, driven by local entrepreneurs and adapting to local needs, but supplied with certain centralized design and standards, as well as products. Whittle Communications is a communications and publication company, and one could think of the Edison Project schools as extending the traditional influence of textbook publishers on the definition of public schooling. But the communications and technology assumptions being built into the Edison Project schools represent a quantum leap forward in sophistication and economic power from the era of the textbook. While some of the distinctiveness of NAIS schools has lain in their independence from the influence of the textbook publishers, the advent of comparatively low-cost, high-tech schools will change the terms on which this distinction was based. Furthermore, Edison Project schools may also compete directly with independent schools for staff: attracting school heads at NFL coaches' salaries, for example, and faculty at current school heads' salaries.

A second reason for our prediction that the topography of education will change significantly in the next 15 to 20 years is technological development. We are on the verge of a new era, in which children and families will have direct electronic access from their homes to 200 daily newspapers, the entire contents of the Library of Congress, and a vast array of other information resources supporting almost every conceivable kind of inquiry. While it has been clear to us that advances in technology and communications will significantly affect education, we have no basis yet for estimating the potential costs. We sense that the many innovations already under way in public and private schools are still in such a developmental stage that it is too early to deduce anything about their long-term potential to reduce costs in independent schools as we currently know them. Clearly this is an area that research must address in the future.

A third reason for our prediction is that parents, and especially wealthy parents, are tending to view educational institutions in ways that differ markedly from earlier conceptions. Wealthy families whose children attend public schools are now regularly supplementing their free public education with private tutoring and other alternative provisions in areas not, or not adequately, covered by the public schools. These areas include language, math, test preparation, music, and sports. That is to say, the schooling experience is becoming deinstitutionalized, and this is a trend that is almost certain to continue. Most wealthy families will be likely to continue receiving services from several "schools" in the future. Some may not choose any one school as a primary provider of education, but may design their own curricula from a variety of providers.

What will be NAIS' role in the changing and expanding universe of private schools? Will it help define the ideals of what education should be? NAIS today enrolls about 6 percent of all private school students. Whittle alone believes his company will run schools enrolling from one to three million students, i.e., from three to six times the entire NAIS enrollment. Unless NAIS expands, it will be a much smaller part of a much larger private sector.

Whittle's company, of course, may not receive the financing it needs and may not develop. But the idea is in the public domain: to take advantage of the many new factors in technology, communications, organization design, and methods of conveying knowledge that are used outside formal education. And the business sector may be just sufficiently alarmed about the state of education in this country to invest heavily in new schools.

Independent schools need to understand as fully as possible the forces motivating the current groundswell of change in American elementary and secondary education. To do so will require a more active research role than they have been accustomed to.

CONCLUSION

WE HOPE THAT IN REFLECTING ON THE RESEARCH, ANALYSIS, AND quantitative models offered in this book you have been able to sustain a broad perspective, seeing these issues not only in terms of your own school but of also of independent schools generally. The quality and strength of the independent school sector as a whole are important for the survival and vitality of individual independent schools. Educational rationales for small enrollments make many independent schools expensive on a per-student basis. Institutional autonomy and independence have the inevitable consequence of engaging literally thousands of trustees, administrators, and faculty members in routinely repeating work that others have already done. An enhanced collective capability on the part of independent schools to engage what are really "industry" challenges will help us in at least two ways to address the issues of quality, access, and cost, which have been the central concerns of the Project on Pricing and Affordability. First, by taking advantage of economies of scale, collective initiatives have the potential to achieve direct reductions in costs. Second, collaborative activity fosters the exchange of ideas, which in turn accelerates progress toward solutions of shared problems. Our choice to adopt, in this book, a collective rather than a case study perspective on independent schools reflects these convictions.

The magnitude of the affordability challenge clearly defines it as a long-range project. For example, if a school were to hold its annual tuition increase to 4 percent while some other index such as that for consumer prices or family incomes increased annually at 5 percent, it would take 10 years to achieve a real comparative reduction of 10 percent in the tuition. Because many schools face what feel like more pressing, immediate challenges, and because trustee and administrator turnover cycles are characteristically shorter than 10 years, it is very difficult to establish and sustain an institutional planning perspective with a 10-year horizon. But, as we've pointed out, ensuring that the school is there for future as well as for current students is one of the central responsibilities of boards of trustees. A standing committee for long-range planning should be a must for every board. Conference programs should place greater emphasis on the exchange of substantive information about long-range strategies being developed by schools, where in the past they have tended to focus more on the long-range planning process. And the exchange of ideas should include reference to gauges of the position of independent schools in relation to American society, such as the independent school affordability index. For, just as with the effects of compounding on financial relationships, apparently small year-by-year demographic changes can, over a period of years, substantially redefine a school's profile in relation to society at large. This is why independent schools must collectively find the way to reverse their declining affordability.

The work that we have done and reported on in chapters I through VII is the outcome of the collective endeavor of many people who care deeply about the future of independent schools. The work that we have not done, some of it identified in this chapter, has the potential to contribute further to our understanding of the affordability challenge and to our development of successful strategic responses. Yet even this concluding list of important things we wish we knew and understood more fully only scratches the surface. If nothing else, it serves to remind us why we are in education in the first place. It is because we believe in the importance of learning.

Project on Pricing and Affordability: Research Group Members

H. Peter Aitken

Peter Aitken began his independent school teaching career at Eton College in Windsor, England, and was later Headmaster of the Brooks School in North Andover, Massachusetts, from 1973 to 1986. As Director of Administrative Services and subsequently as Director of Research at NAIS from 1988 to 1993, he redesigned the Association's professional development programs for new and experienced school heads and oversaw a comprehensive upgrade of the computer hardware and software applications that support NAIS' statistical operations. Between 1991 and 1993, he directed the NAIS Project on Pricing and Affordability. He is now a consultant to independent schools in strategic financial analysis and planning.

He is a former Trustee of the Pike School in Andover, Massachusetts, and a former Director and current member of the Trustee Committee of the Association of Independent Schools in New England.

R. Denny Alexander

A resident of Fort Worth, Denny Alexander is the owner of R. Denny Alexander & Co., an investment management company; managing partner of Alexander Trust Investments; advisory trustee to the R.D. & C.R. Alexander Foundation; and managing partner of the OPNB Building Joint Venture.

He served on the Board of Trustees of the Trinity Valley School in Fort Worth from 1973 to 1985, for four of those years as President. As an NAIS Director from 1984 to 1990, he served as Treasurer and was a member of both the Finance and Executive Committees.

Charles F. Clark

Charles Clark has been Head of the Orchard Country Day School in Indianapolis since 1984. Between 1973 and 1984 he taught and served in a variety of administrative capacities at the Tatnall School in Wilmington, Delaware, and he was a faculty member at the Peddie School in Hightstown, New Jersey, from 1970 to 1972. He was President of the Indiana Association of Independent Schools from 1989 to 1992.

Bruce S. Cooper

Since 1981 Bruce Cooper has been a Professor of Education at Fordham University in the Department of Administration, Policy, and Urban Education. He is a specialist in school finance and is particularly interested in comparative measures of resource allocation and productivity in schools and school districts. From 1986 to 1988 he was a Visiting Professor at the University of London's Institute of Education.

From 1975 to 1981 he was an Assistant and Associate Professor of Education at Dartmouth College and, for the three years prior to that, Assistant Professor in Educational Administration at the University of Pennsylvania. From 1970 to 1972, he was involved in the President's Commission on School Finance, doing research and evaluation under the auspices of the U.S. Department of Health, Education, and Welfare. He has spent five years as a teacher of English to secondary school students.

He is the author or coauthor of some fifteen books, including *Graying Teachers: State Retirement Systems and Local Early Retirement Programs* (University of Oregon and ERIC on Education Management, 1991), written with Frank Auriemma and Stuart Smith.

Neil H. Cullen

Neil Cullen has been the Chief Financial Officer at Phillips Academy in Andover, Massachusetts, since 1986. For the seven years prior to that, he was Treasurer and Director of Administration for The Brookings Institution in Washington, D.C. At Brooklyn College of the City University of New York between 1974 and 1979, he served in several capacities including Dean of Planning and Director of Finance and Planning. At Michigan State University from 1968 to 1974, he was Assistant to the Dean, Assistant Professor, and Assistant/Associate Director of the Field Study Program of Justin Morrill College.

He is chair of the NAIS Business Affairs Committee and a member of the Association of Business Officers of Preparatory Schools.

E. John Effinger

John Effinger has been Head of Wooster School in Danbury, Connecticut, since 1991. He was Head of Grace-St. Luke's Episcopal School in Memphis, Tennessee, from 1987 to 1991, and Head of the Middle School at Landon School in Bethesda, Maryland, for the five preceding years. He was Director of College Placement at Brooks School in North Andover, Massachusetts, from 1977 to 1982 and Associate Director of Admission at Hamilton College from 1972 to 1977.

He is a member of the Advisory Council of Educational Records Bureau (ERB) and a faculty member of the NAIS summer workshop for Business Officers. He is a past member of the Advisory Council of the New England Association of College Admissions Counselors and of the governing board of the Tennessee Association of Independent Schools.

Frank P. Greene

Frank Greene is the President and Chief Operating Officer of the California-based investment advisory firm Wood Island Associates and has held that position since 1986.

He is a partner in the San Francisco venture capital firm Pacific Film Fund, which focuses on producing socially responsible films. For the last 19 years he has also been President of Beachside and Beyond, a Hawaiian firm that markets resorts in the U.S. and Mexico.

He is chairman of the Trustees' Committee of the California Association of Independent Schools. He is also a Trustee Emeritus of The Branson School in Ross, California, where he served from 1984 to 1991, the last two years as Chairman of the Board.

Katharine H. Hanson

Kay Hanson is the Executive Director of the Consortium on Financing Higher Education (COFHE) in Cambridge, Massachusetts, encompassing 32 member independent colleges and universities. She has held this position since 1978.

From 1973 to 1978, she was the Associate Vice President and Director of the Office of the Budget for the University of Massachusetts system. During this period she served as a member of the Governor's Advisory Task Force on Financing Post Secondary Education. As Assistant Director of Analytical Studies and Planning at Boston University from 1971 to 1973, she was responsible for institutional research in the areas of fiscal, physical, and personnel planning.

She is a Director of the New England Education Loan Marketing Corporation and a member of the Committee on Financing Alternatives for the Secretariat of the National Association of Independent Colleges and Universities. She was a Trustee of Stanford University from 1982 to 1987.

William C. Keator

Following four years in independent school teaching, one at the Williston-Northampton School in Easthampton, Massachusetts, and three at the Hill School in Middleburg, Virginia, William Keator completed his master's degree at the Harvard Graduate School of Education in 1993.

Nancy L. Kelley

Nancy Kelley has been Assistant Head of the William Penn Charter School in Philadelphia since 1991. For the four years prior to that she was Head of the Lower School at The Haverford School in Haverford, Pennsylvania. From 1977 to 1987 she was at The Baldwin School in Bryn Mawr, Pennsylvania, the last four years as Head of the Upper School.

She is a board member of the Pennsylvania Association of Private Academic Schools. She is a cofounder of the Council for Women in Independent Schools (CWIS) in Philadelphia and served a three-year term on the CWIS National Board.

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Previously, he was Associate Dean for Academic Affairs from 1963 to 1976 and Lecturer on Education during his last eight years at the Harvard Graduate School of Education. He taught history at Wilbraham Academy in Wilbraham, Massachusetts, from 1960 to 1961.

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He taught economics at Harvard University in 1964-65, following a term as a staff member on President Lyndon Johnson's Council of Economic Advisors. He was an economics columnist for *The New York Times* from 1980 to 1981 and a contributing editor of *Newsweek* from 1981 to 1983. He currently writes for *The Boston Globe* and appears regularly on "The Nightly Business Report" television program.

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With Frank Roosevelt, Jr., he coauthored *Tuition Reform for Private Schools: the Manhattan Country School Plan*, published by the Ford Foundation in 1981.

Among a number of government reports, he wrote *Evaluation of the School Finance Study* in 1984 and *Framework for Examining the Financing of Private Schools and Related Issues in the School Finance Study* in 1979.

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Index

References to figures are printed in italics.

References to tables are printed in boldface type.

Academic achievement and class size, research on, 96–100
Access. *See also* Affordability
  defined, 11
  NAIS mission statement on, 18
  measured by financial assistance data, 16, 76, *19, 20*
Access and quality, tension between goals of, x, 2, 15
Administration, costs of
  defined for SSAM, 50
  reducing, 56–57, *15*
Administrative expense ratios, outlier data on, 36–37, *9–14*
Afford, defined, 19
Affordability. *See also* Access
  as long-range issue, 138
  decline in, 21, 76
Affordability index. *See* Independent school affordability index
Alternative revenue sources, 30
Alternative schooling, ix, 136–37
Asset management, 69–70

Benefits. *See* Faculty salaries and benefits
Blatchford, P., 99
Bracey, Gerald, 99
Bressler, Marvin, 9
Britain, educational system of, 3
Budget. *See also* Expenses; Financial operations; Revenue
  balanced for current year, 62–63
  balanced over time, 63–64
  balanced through overenrollment, 32
Budget spreadsheets, sample, **10A–D**
Buildings, facilities, and transportation, costs of defined for SSAM, 50

Canadian schools
  class size in, 96
  teacher load in, 38
Center city schools, growth of, 136
China, educational system compared with U.S., 4, 6
Class size, 93–100
  and academic achievement, research on, 96–100
  effect of on disadvantaged and minority students, 98, 100
  in Canadian schools, 96
  in English schools, 96
  in public schools, 96, 98
  and individual attention in upper grades, 102–107, *30–35*, **13**
  and individual attention, model for lower grades, 107–111
  NAIS data on, 95–96
  and outlier data, 37–38, *9–14*
  and student-teacher ratio, difference defined, 95
  studies of, 96–100
  "threshold" for, 99
Collaboration. *See* Cooperative efforts, independent school
Communications, effect of advances in on education, 137
Compounding expenses, effects of, 63, *16*
Cooper, B. S., 48
Cooperative efforts, independent school, 24, 55, 60, 138
Cost. *See also* Expenses
  containment, focus on in '90s, 1
  containment or reduction, relationship to school mission and program, 126
  potential reduction through economies of scale, 55, 137–38
  potential reduction through technological advances, 137

Deferred maintenance
  addressed in the '80s, 1
  hidden expense of, 63
Deinstitutionalization of education, 137
Disadvantaged students, effect of small classes on, 98, 100
Distinctive nature of independent schools, 58–59, 93, 94, 136
Diversity and Multicultural Services, NAIS Department of, 11
Diversity in independent schools, 18, 83
"Dividends and interest" approach to endowment spending, 70
Downsizing, 32–33, *5–8*

Economies of scale, 55
  collective efforts of independent schools to realize, 138
Economy, national
  dependence on education, ix, 4, 7
  effect of on independent schools, 1, 15, 44
Edison Project, ix, 136, 137
Education
  bulwark against societal disintegration, 9–10
  effect of advances in technology and communications on, 137
  factor in rich/poor dichotomy, 9
  key to national economic health, ix, 4, 7
  trend toward deinstitutionalization of, 137
Educational system, U.S.
  alternative schooling systems to, ix, 136–37
  comparisons with European and Asian systems, 3

  poor performance of versus world, 4–8
  projected changes in, 135–37
  reasons for failure of, 4–8
Efficiency
  administrative and operational, 56–57, *15*
  minimum school size for operational, 33, *5–8*
Elementary schools, outliers in public, 55, 7
Endowment, 69–70, *17*
  preserving purchasing power of, 70, *17*
  spending, 70
  types defined, 69
England, educational system of compared with U.S., 3
English schools, class size and student-teacher ratio in, 96
Enrollment
  budget incentives to increase, 32
  and net revenue per student, relationship, 32, 33, *5–8*
  statistics for NAIS member schools, 12
Expense analysis, "school-site" versus "institutional," 52, **5**
Expenses. *See also* Cost
  deferred, 63
  effects of compounding on, 63, *16*
  NAIS school data on by category, 30–31, **1**
  NAIS Financial Operations survey, 36–37, *9–14*
  independent and private versus public school, 52, 54–55, 58, **4, 6, 9**
  model for tracking (SSAM), 48–59, 60, *15*, **4–9**
  program and school mission, 114–15, 117
  program, per-student analysis of for six NAIS schools, 117, **14–19**
  SSAM analysis of by function and location, 48–59, **4–9**

Facilities. *See* Physical plant
Facilities portfolio management model, 71–72, *18*
"Factor price equalization," 5
Faculty salaries, *3*
  increased in '80s, 13, 15, *3*
  rationales for increasing, 13–14
  potential ways of increasing, 46, 106
  and public school salaries, compared, 13–14
  related to student-teacher ratio and per-student costs, 105
  tuition increase linked to rise in, 13
Faculty salaries and benefits, 94
  as percentage of total school expense, 30
  deferred expense, 63
  increased in '80s, 1
  relationship with student-teacher ratio, 102–103, **13**
Faculty Salary Systems in Independent Schools, NAIS publication, 13
Family income statistics, U.S. Bureau of the Census, 12
Ferguson, Ronald, 99–100
Financial aid
  analysis of one school's allocation, 84–87, **12**
  as deferred expense, 63
  change in tax policy on tuitions as potential source of, 45–46
  impact of tax structure on, 60
  increased in '80s, 1
  shift in family income of applicants for, 43–44
  targeting special groups, 84
  tax costs of in NAIS schools, 46, **3**
  trends not sustainable, ix
  tuitions redefined for tax purposes to support, 47–48
Financial aid and tuition remission
  as percentage of school expenses, 30–31
  data and analysis, 78–87, *20–26*, **11**
Financial assistance
  cost to independent schools of, 17
  collective spending in independent schools on, 75
  enrollment, tuition, and, 87, *27–29*
  impact of tax policy on, 40–48, 60, **2, 3**
  NAIS data on analyzed to measure access, 16, 76, *19, 20*
  policies and objectives, 75
  programs not sustainable in future, 17, 76–77
  recipients as gauge of access, 16, 17, 76, 80
  required by majority of families, 13
  statistics on 1992 awards, 13
Financial equilibrium, long-run or long-term
  defined, 61
  model of, 62
  and strategic planning, 62
Financial operations of NAIS schools, 1990–91, **1**
  analysis of, 30–31
For-profit schools, recent growth of, 136
France, educational system of compared with U.S., 3

Germany
  apprenticeship training programs in, 5, 6–7
  educational system of compared with U.S., 3
Glass, G.V., 97, 98
Government grants to independent school students, 135

High schools, outlier data from public, 55, **8**
"Historical spending level" approach to endowment spending, 70
Home schooling, recent growth of, 136
Hopkins, David, 61

Income. *See also* Budget; Revenue
  restricted and unrestricted, 81
  sources, alternative, 30
Independent Education Fund, 134
Independent and private schools, cost comparison of public schools with, 52, 54–55, 58, **4, 6, 9**
Independent school affordability index, 19–21, 138, *4*
  applied to U.S. families, 76
  limitations of, 76
Independent school graduates
  roles redefined, 2
  significance disproportionate to numbers, 10
Independent schools
  cooperative efforts among, 24, 55, 60, 138
  distinctive nature of, 58–59, 93, 94, 136
  investment strategies of, 69–70
  role of in addressing socioeconomic issues, 10
  service to U.S. education by, 2
  size of, 32–33, *5–8*
Individual attention, 93–94, 100–102, 121

Individual attention and class size
  model for lower grades, 107–111
  upper grades, 102–107, *30–35*, **13**
Individual attention and teacher hours per student, 102–107, *30–35*, **13**
Inner-city schools, 136
Inner-city students, effect of small classes on, 98, 100
Instruction, costs of defined for SSAM, 50–51
Instruction expense ratio outliers, 37, *9–14*
Investment strategies, 69–70
"Investment yield" (investment strategy), 69

Japan, educational system of compared with U.S., 3, 6

Kazal-Thresher, Deborah, 99

Long-run financial equilibrium (LRFE), 61
Long-term financial equilibrium model, 62

MAGs, 109–10
Maintenance of school facilities, deferred
  addressed in '80s, 1
  hidden expense of, 63
Market forces, influence of on school program, 117–21
Marketing, difficulty of for NAIS schools, 134
Massy, William, 61
Mathematics, increasingly required, 5
Minority students, effect of small classes on, 98, 100
Mission, school
  defined, 114–115
  related to program expense, 117, 126–31, *36*, **21–23**
  related to program growth and market forces, 117–21
Mission statements, school, 32
Mortimore, P., 99
Multiculturalism, 18
"Multiple adult groupings" (MAGs), 109–10

A Nation at Risk, 13–14
National Association of College and University Business Officers (NACUBO), 71
  facilities management model, 71–72, *18*
NAIS
  efforts of to improve faculty salaries, 13–16
  Financial Operations survey form, 36
  member school enrollment statistics, 12
  mission statement, 14, 18
  role of in future of independent schools, 137
  role of in public policy issues affecting education, 135
  tuition statistics, member school, 1954–90, 12, *1*, *2*
  Task Force on Faculty Compensation, 13
National Education Longitudinal Study of 1988 (NELS:88), 40, 134
National Educational Goals, 135
National Teacher Certification movement, 135
NELS:88, 40, 134
New American Schools, ix

Outlier schools
  analysis of, 32–41, *9–14*
  defined, 29, 34
  public elementary school, 55, 7
  public high, 55, **8**

Physical plant
  deferred maintenance of, 63
  preservation of, 70–72, *18*
  and transportation costs defined for SSAM, 50
Portfolio allocation, 69–70
Powell, Farrar, and Cohen, 1985, 115
PRIME TIME, Project, 97
Private and independent school cost comparison with public schools, 52, 54–55, 58, **4, 6, 9**
Private school sector, change and growth in, 135–36
Profession at Risk, NAIS publication, 13
Program, school
  changes to as indicators of market pressures, 117–21
  cost increases from changes to, 117–19
  costs related to school mission, 117, 126–31, *36*, **21–23**
  effects of variety and scale on costs of, 121–26, **20A–C**
  expansion of, 115, 122
Project on Pricing and Affordability
  description of, 1–2
  goals, 2, 11, 15–16
  origins, x, 1, 10, 11
Project STAR, 97, 98
Property tax as equivalent of tuition, 45, 60, 134, 135, **2**
Public policy, NAIS role in issues affecting education, 135
Public schools
  class size in, 96, 98
  costs compared with independent schools, 52, 54–55, 58, **4, 6, 9**
  faculty salaries in, 13–14
  outliers (elementary school), 55, 7
  outliers (high school), 55, **8**
  study of resource allocation systems in, 48
  taxes equivalent to tuition in, 45, 60, 134, 135, 2
Pupil support costs defined for SSAM, 50

Quality and access, tension between goals of, x, 2, 15

Recession, effects on independent schools of, 1, 15
Research Group, 2
  members, 139–45
Revenue. *See also* Budget; Income
  alternative sources of, 30
  NAIS data on by category, 30, **1**
  per-student outlier data, 39, *9–14*
  per student related to school size, 33, *5–8*
Rich/poor dichotomy in U.S., 9, 17, 77, 82
Robinson, G.E., 97–98

Salaries. *See* Faculty salaries
Sarrel, R., 48
School-age population shrinkage, 1, 15
School and Student Service for Financial Aid (SSS), 19, 41

- School choice initiatives, implications of, 135
- School Site Allocations Model (SSAM), 48–59, 60, *15*, **4–9**
  - "central office" defined for, 49
  - "institutional" defined for, 49
  - "school-site" defined for, 49
- Schooling, alternative, ix, 136–37
- "Shopping mall high school," 115
- "Shopping mall prep school," 115
- Size
  - class. *See* Class size
  - school, 32–33, *5–8*
  - school, "ideal," 32–33
  - minimum for efficient school operation, 33
  - per-student revenue in relation to school, 33, *5–8*
  - school, "right," 32–33
- Slavin, Robert, 97, 98
- Smith, M.L., 97, 98
- Staff development and support costs defined for SSAM, 50
- Stanford Achievement Test, 96
- STAR, Project, 97, 98
- Strategic planning and financial equilibrium, 62
- Student support costs defined for SSAM, 50
- Student-teacher ratio, 94, 99, *30–35*
  - and class size, difference defined, 95
  - increasing to reduce costs, 59
  - in English schools, 96
  - in upper grades, 102–107, *30–35*, **13**
  - outliers, 37, *9–14*

- Taiwan, educational system of compared with U.S., 6
- Task Force on Faculty Compensation, 13
- Tax policy
  - impact of on financial aid programs, 40–48, 60, **2, 3**
  - NAIS role on issues, 135
  - resulting in public school "tuitions," 45, 60, 134, 135, **2**
  - study of as potential aid to access, 135
- Teacher. *See* Faculty
- Teacher hours per student as measure of individual attention, 101, 104–107, *30–35*, **13**
- Teacher loads, 38–39
- Technology, effect on education of advances in, 137
- Thurow, Lester, ix, 2
- Tomlinson, T.M., 98
- "Total return" (investment strategy), 69
- Tuition discount, 84, 87–89, *27–29*, **12**
  - defined, 81
  - mathematical model of, 88–89
- Tuition and fees as percentage of school revenues, NAIS data on, 30
- Tuition increases
  - in '80s, 1
  - linked to faculty salary increases, 13
  - rising rate of, 13, *1, 2*
- Tuition remission
  - and financial aid, 30–31, 84
  - data and analysis, 42, 78–87, *21–26*, **11**
- Tuitions
  - potential for reduction in, 45–48, 106
  - range of, 12
  - redefined for tax purposes to support financial aid, 47–48, 135
- Tutoring as supplement to public education, 137

- U.S. Chamber of Commerce 1993 study of resource allocation in public schools, 48
- U.S. educational system. *See* Educational system, U.S.

- Variety and scale, effects of on costs of school program, 121–26, **20A–C**

- Wechsler, Dana, 48
- Whittle, Chris, 136, 137
- Whittle Communications, 136
- Wittebols, J.H., 97–98

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